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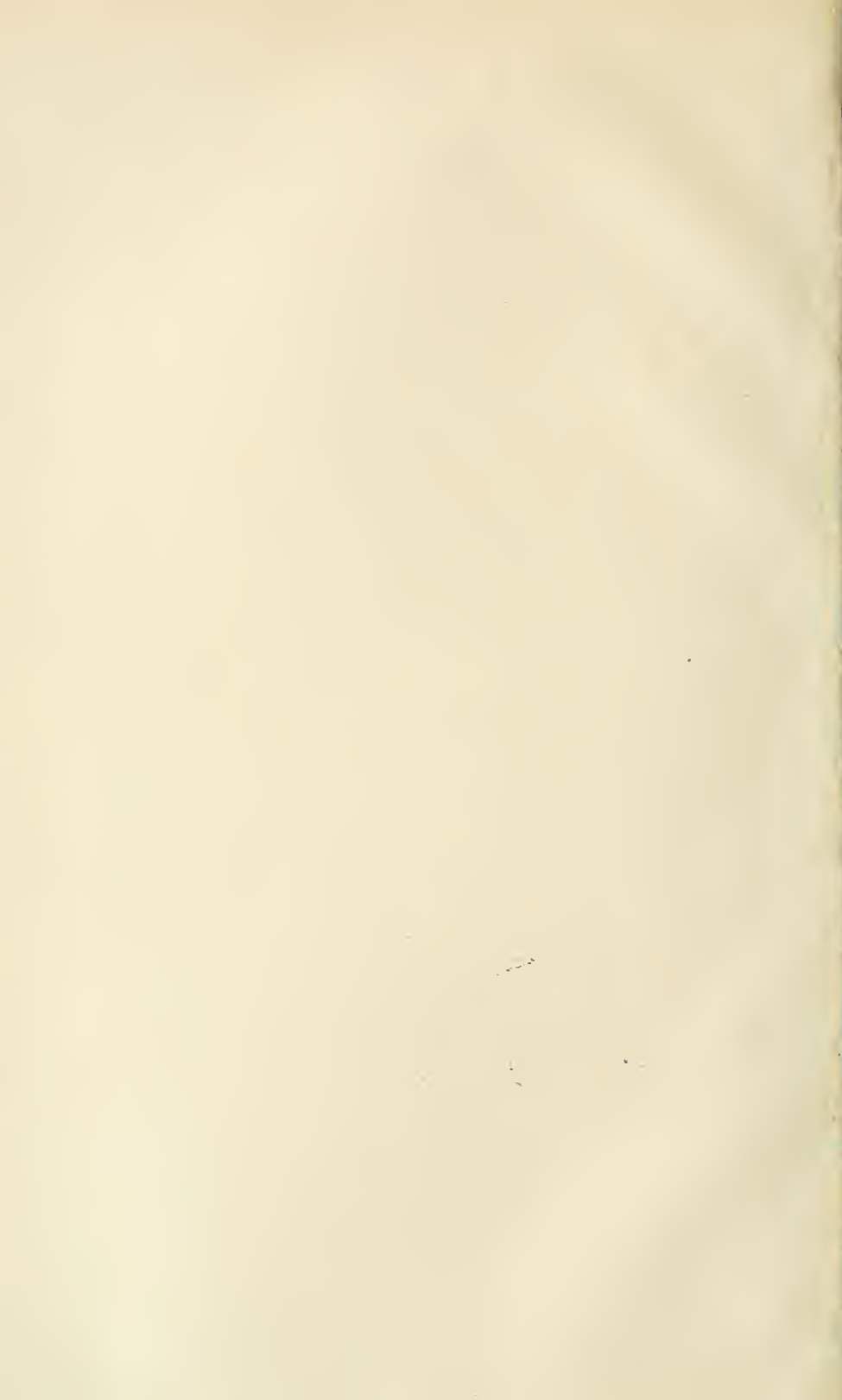
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R. NORRIS WOLFENDEN, M.D. Cantab.,

JOHN MACINTYRE, M.B. Glasgow,

DUNDAS GRANT, M.A., M.D., F.R.C.S. Eng.,

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THE PHONOGRAPH: ITS PHYSICS, PHYSIOLOGY, AND
CLINICAL IMPORT.¹

By J. MOUNT BLEYER, M.D. (New York),

Visiting Surgeon to the New York Throat, Nose, and Chest Hospital; Laryngologist
German West-Side Clinic; Member Royal Academy, Naples, Italy, &c.

BEFORE I enter upon a demonstration of the underlying principles and the action of the phonograph, let me occupy a moment of your time by recalling those special characteristics of the human voice, the distinguishing qualities of musical tones, etc., which it is necessary to keep before us in order to thoroughly understand the instrument I intend to dissect, both anatomically and physiologically, before you.

You are all more or less familiar with the phonograph. Five years ago it was a closed book to us. To-day we presume to know it from preface to appendix. I fancy there are many here in this section who casually know me from the few years of work I have done in experimenting with the machine and the fragments that from time to time have gone forth to the profession from my pen and workshop. I can almost hear them say, "Here he is again; what can he have to tell us now?" My answer is simply to let you know the further stage of perfection to which I have been able to carry the recording and reproducing with integrity the sounds and tones which, aside from their general scientific

¹ Communication to the Royal Academy of Medicine and Surgery of Naples, 1894.

importance, must soon become a valuable assistant to us in the positive recognition of disease.

All sound begins in those collisions and attractions among material things by which their parts are thrown into tremors. These are almost as various in quality as the properties of material substances. The sounds we hear are but indices to the vibrations of bodies from which they proceed, and the multitude of such terms as splash, roar, ring, thud, crack, whiz, squeak, crash, illustrate the marvellous diversity of characters which material vibrations may take. In the production of noise, the thrills of matter are transient and irregular, but, when prolonged and regular, they give rise to musical sounds. Vibration depends upon elasticity, and bodies which are capable of the protracted and measured pulsations of music must, of course, be highly elastic. All bodies vibrate differently, and this depends upon the nature, form, and magnitude of the mass in motion. The vibrations of bells differ with their sizes, and the metals and alloys which compose them; while wooden and metallic tubes, strained strings, and stretched membranes illustrate the same thing.

Take a tuning-fork, and set it into vibration by drawing a violoncello string across its prongs; the fork yields its own characteristic note, which will be loud or soft in harmony with the manner in which the fork has been set into vibration. So long as we use one fork only, it is obvious that the only vibration which can be produced in the sounds confines itself to a vibration of their intensity. If the extent of the vibrations be small the sound resulting is feeble, its loudness increasing with the excursion of the prongs. What is true of the tuning-fork is true of any musical instrument, and hence the loudness of musical sounds depends upon the amplitude of the vibratory space of that which produces it. Now take two tuning-forks differing in pitch, and let us presume that one is just an octave above the other. They may be excited in such a way that the notes emitted are of equal loudness, the only point in which they differ being in pitch.

We all know that the pitch of a fork depends upon its rate of vibration, which we can readily measure with suitable apparatus, and thus it is comparatively easy for us to accurately determine the pitch of a tuning-fork, and should we so test the two tuning-forks in question, we should find that the notes of the one of increased pitch would vibrate twice as fast as the other. If the one, say, makes one hundred oscillations per second, the other, an octave higher, would make two hundred in the same interval of time; thus we may be assured that the pitch of any note depends upon its rate of vibration and nothing else.

So having accounted for two characteristics of a musical note, let me come to the third, which is of equal if not greater importance, and by no means so easy of explanation. I refer to what we generally term the *quality*. The French have a more comprehensive term for it—they call it *timbre*, while the Germans have the most exact defining word in the term *Klang-farbe*.

Klang-farbe is that which constitutes the difference between a violin

or an organ and a pianoforte, or between two human voices ; indeed, we may say between any sounds, musical or otherwise, which are of the same pitch and loudness, but readily distinguishable from each other.

To explain the physical cause of quality, let us suppose we have a

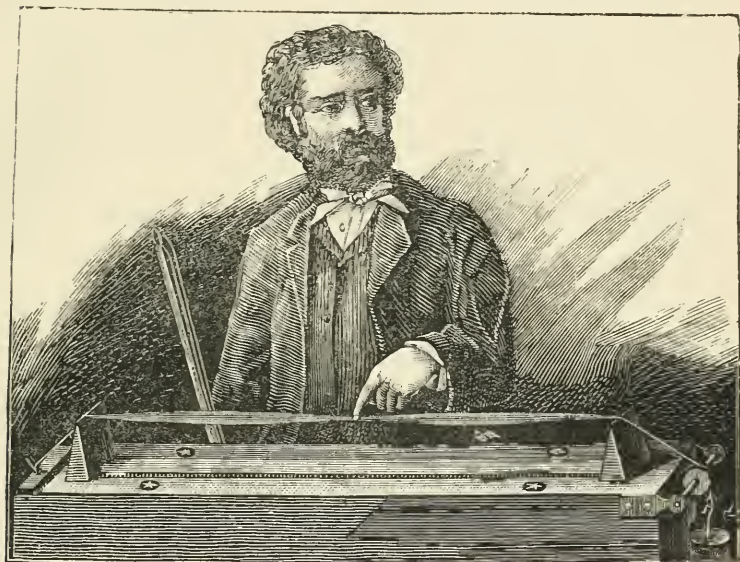


FIG. 1.

thin metallic wire stretched between two points over a sounding board. When plucked at the centre the wire vibrates over its entire length, a loop being formed between the two points. The note emitted by the wire when vibrating in this manner is called the fundamental note. If we should dampen the wire at the centre by laying across it a feather or quill pen, and pluck it at a point midway between the centre and one end, both halves would vibrate in the same manner and independently of each other. That is to say, there will be two vibrating segments at a point of rest or node at the centre. But the rapidity of vibration of each segment will be twice as great as that of the wire when vibrating as a whole, and consequently the note emitted will be the octave of the fundamental.

When damped at a point one-third of the length from either extremity, and plucked half way between that point and the nearer extremity, the wire will vibrate in three equal divisions just as it vibrated before in two divisions, but now the rate of vibration will be three times as great as at first, and the note produced will be a twelfth above the fundamental. Similarly, by dampening and plucking it at suitable points, the wire may be made to vibrate in four parts, five parts, six parts, etc., the rate of vibration increasing to four, five, six, etc., times what it was at first. For example, let us assume that when the wire was swinging as a whole and

sounding its fundamental note, the number of oscillations performed in a second was 100. Then we see that, by taking suitable precautions, the wire can be made to break up into two, three, four, five, six, etc., vibrating segments, the rates of vibrations being respectively 200, 300, 400, 500, 600, etc., and the series of notes emitted being the octave above the fundamental, the fifth above the octave, the double octave, the third and fifth above the double octave, and so on. We now come to an important point, which is this : that, the wire being free, it is practically impossible to strike or pluck it in such a way as to make it vibrate according to one of the above systems alone. It will vibrate as a whole, wherever and however it is struck, but this mode has always associated with it or superposed upon it some of the other modes of vibration to which we have just referred. In other words, the fundamental note is never heard alone, but always in combination with a certain number of its overtones, as they are called. Each form of vibration called into existence sings, as it were, its own song, without heeding what is being done by its followers, and the consequence is that the sound which reaches the ears is not simple but highly composite in its character. The word *clang* has been suggested to denote such composite sound, the constituent simple sounds, of which it is the aggregate, being called its first, second, third, etc., partial tones. All the possible partial tones are not necessarily present in a clang, nor of those which are present are the intensities all the same. For instance, if the wire be struck at the centre, that point cannot be a note, but must be a point of maximum disturbance ; hence all the even partial tones are excluded, and only the odd ones, the first, third, fifth, and so on, are heard.

That characteristic of a musical note or clang, which is called its quality, depends upon the number and relative intensities of the partial tones which go to form it. The tone of a tuning-fork is approximately simple, so is that of a stopped wooden organ pipe of large aperture blown by only a slight pressure of wind. Such tones sound sweet and mild, but they are tame and spiritless. In the clang of the violin, on the other hand, a large number of partial tones are represented ; hence the vivacious and brilliant character of this instrument. The sounds of the human voice are produced by the vibrations of vocal bands, aided by the resonance of the mouth. The size and shape of the cavity of the mouth may be altered by opening and closing the jaws, and by tightening and loosening the lips. We should expect that these movements would not be without effect on the resonance of the contained air, and such proves upon experiment to be the fact. Hence, when the vocal bands have originated a clang containing numerous well-developed partial tones, the mouth cavity, by successively throwing itself into different postures, can favour by its resonance first one overtone and then another, at one moment *this* group of partial tones, at another *that*. In this manner endless varieties of quality are rendered possible. Anyone may prove it himself, by making the experiments, that when singing on a given note he can only change from one vowel sound to another by altering the shape and size of his mouth cavity.

THE PROPAGATION OF SOUND.

Having thus briefly indicated the physical causes of the various differences in musical notes, and the production of sounds by the organ of voice, I will now devote a few moments to consider how these sounds are propagated through the air and reach the delicate diaphragm of the phonograph, while recording any kind of sounds.

Now, in order that all these multifarious and diversified tremblings of natural objects may be brought into relation with animate creatures, a common medium of communication is necessary. The air around us is such a medium. It possesses the marvellous power of taking up the numberless and ever-varying thrills of material objects, and conveying them through space with all their peculiarities. The sensitiveness of the air (if I may so speak) to the faintest tremors in material objects, and its power of transmitting their individual qualities, are most wonderful. It drinks up the infinitesimal motions of things, and diffuses them swiftly, simultaneously, and in countless myriads, in all directions around.

That air is the medium of sound is proved by the fact that, when vibrations occur in space void of air, the silence is not broken. If a bell suspended by a string in a vacuum be struck, nothing is heard, although if it is in contact with the jar, the vibrations are communicated to the outer air, and sound produced. That air transmits the kind of motion that it receives is also proved by the fact that it will take up vibrations at one point and communicate them to a distant object that is capable of vibrating in the same way.

The velocity of impulses in the air which produces sound has been well established, and all kinds of shocks—the firing of a gun, notes of a musical instrument, or the voice, whether high or low, harsh or soft—all move at the same rate. The velocity is not affected by changes in atmospheric pressure or moisture, or by rain or snow, but it is affected by wind and by temperature. The speed of sound is 1090 feet per second at the freezing-point, and increases about one foot per second for each degree of ascent on the Fahrenheit scale. Sound moves in air with about the speed of a cannon-ball, and at a rate ten times greater than the swiftest motion of air in a hurricane.

The sound produced in the open air tends to move in all directions with equal speed, but this tendency may be disturbed by various conditions. If the whole mass of air is moving in one direction, sound will travel faster with it than against it. In still air the sound of a musket-shot will be heard farthest in the direction of the impulse. Experiments have shown that a person speaking in the open air can be heard about equally well at a distance of one hundred feet in front, seventy-five feet on each side, and thirty feet behind. When an obstacle checks a sound in one direction it can be heard farther in others, because, as a given amount of force produces a given amount of motion, if the motion is arrested in some directions, it is increased in others.

We have now seen that air is the common vehicle of sound, and that the sound impulses move in all directions at a high speed. But what is

it that actually moves? The particles of air are certainly not shot from the vibrating body to the ear, for then we should live in the midst of storms ten times more violent than tropical cyclones. The wonderful elastic properties of gases here come into play. The vibrations of bodies produce waves or pulses in the air. When a disturbance is produced at any point in an aerial at rest, sonorous undulations spread out from that point in all directions. These undulations are the effect of the rapid vibratory motion of the air particles. The analogy of water waves will help us to understand what is taking place under these circumstances. If a stone be dropped into the still surface of a pond, a series of concentric circular waves are produced, each wave consisting of a crest and a hollow. The waves travel from the centre of disturbance, while the drops of water which constitute them have an oscillatory motion in a vertical direction—that is to say, following any radical line, the water particles vibrate in a direction at right angles to that in which the wave is propagated. The distance between two successive crests or two successive hollows is called the length of the wave; the amplitude of vibration is the vertical distance through which an individual drop moves. In a similar manner sonorous undulations are propagated through air by the oscillatory motion of the air particles. But there is this important difference between the two cases—in the latter, the vibrating particles move in the *same* direction in which the sound is being propagated. Consequently such waves are not distinguished by alternate crests and hollows, but by alternate condensations and rarefactions of the air, the transmission of which constitutes the transmission of sound. The wavelength is the distance between two consecutive condensations or rarefactions. It depends upon the pitch of the transmitted sound being shortened as the sound is more acute, while the extent of vibration of the air particles increases with the loudness. Such are the peculiarities of the vibratory motion in air corresponding to the pitch and loudness of the transmitted sound. But what is there in the character of the motion to account for the difference in quality? A little reflection will show that there is only one thing left to account for these, and that is the form of the vibration. Let us mentally isolate a particle of air, and follow its movements as the sound passes.

If the disturbance is a simple one, produced, say, by the vibration of a tuning-fork, the motion of the air particle will be simple also—that is, it will vibrate to and fro like the bob of a pendulum, coming to rest at each end of its excursion, and from these points increasing in velocity until it passes its neutral point. Such, however, is clearly not the only mode of vibration possible. If the disturbance be produced by a clang comprising a number of partial tones of various intensities, all excited simultaneously, it is obvious that the air particle must vibrate in obedience to every one of these tones. Its motion will be the resultant of all the motions due to the separate partial tones. We may imagine it starting from its position of rest to move forward, then stop short, and turn back for an instant, then on again until it reaches the end of its excursion. In returning it may perform the same series of to and fro motions in the

opposite direction, or it may move in a totally different way. Nevertheless, however complex its motion may be—and, as a rule it will be exceedingly complex—its periodic character will be maintained. All the tremors and perturbations in one wave will recur in all the others.

Could we see what takes place in a room when a tuning-fork is in vibration, giving out a "single note," we should behold all the particles of the air agitated in tremulous sympathy, and filling the space with swiftly expanding spheres of spectral beauty. Or, were the effect produced by several instruments played, we should see forms in countless variety, carving the air into ever-changing figures of geometrical harmony, and creating the perfect music of geometrical forms. Such a revelation is impossible from the swiftness of movement, which would baffle the eye; but it would be also impossible, because the complications of movement would confuse it. But where the optical sense fails, the auditory sense succeeds. The membrane of the ear receives the torrent of motion, and transmits it with all its harmonies. In an orchestra, where scores of instruments are playing through the whole compass of the scale, the air is cut into waves or pulses by every complexity of vibration—grave tones mingle with shrill, soft with harsh, fundamentals are merged in overtones, and the storm of impulses is shot with the speed of rifle-bullets against the diaphragm of the phonograph as against the tympanum, and yet there is no confusion. In all their infinite diversity of qualities the waves are graven upon the little membranes.

In order to complete the physics in this paper, I cannot pass over it without paying some attention to visible sound.

The idea of getting a visual expression for musical vibrations occurred to Chladni, a physician of the last century. He fastened a plate of glass by its centre, and then, having scattered some sand over the surface, threw it into sonorous vibration by means of a violin bow. The plate, being thus

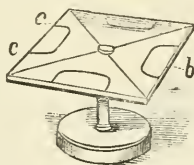


FIG. 2. Vibrations of a Clamped Plate.

set in vibration, the sand was tossed away from certain parts of the surface and collected in other parts, forming regular geometrical figures. The plate, like a string, has one rate of vibrations which belongs to it, but again, like a string, by *dampening* it with a touch of the finger or fingers in different points along the edge, the note changes, and with it the figure made by the sand. The lines on the plate where the sand settles are nodes, the lines of comparative rest. The violent agitation in the parts left bare can be shown by mixing a little lycopodium powder with the sand. This is excessively light, and is caught in the little whirlwinds of air generated about the vibrating segments.

The marvellous intricacy of the vibrations of these plates may be seen

from a few figures given below, which indicate the lines taken by the sand when certain notes were sounded on the plate. A little instrument

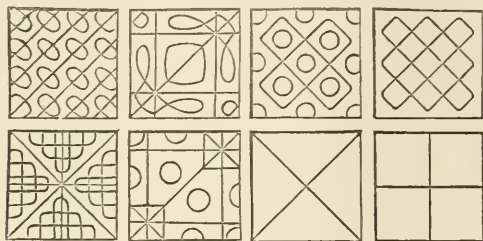


FIG. 3. Chladni's Figures of Vibrating Plates.

invented by Prof. Sedley Taylor, and called the phoneidoscope, gives a most exquisite illustration of music made visible. He says that by this contrivance it is possible by means of a soap film to get different figures for different pitches, for different intensities, and for different qualities of tone. I did not, however, find this instrument to answer in practice.

We are now upon the very threshold of Mrs. Hughes' voice-figures, of which I have spoken *in extenso* in a previous communication ; but for

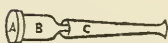
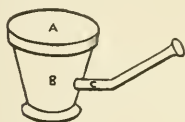


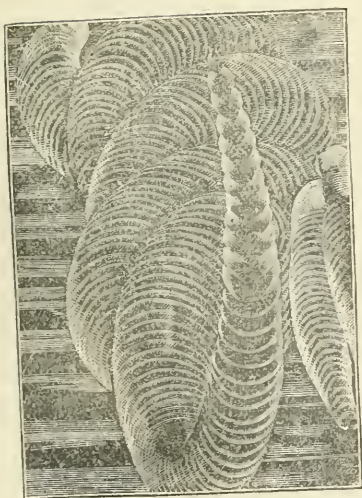
FIG. 4.
The Eidophone.

the sake of completeness, I will recapitulate some of the important points set forth therein. She has reached the path which brought her to them by the phoneidoscope. Her eidophone is constructed on the same principle as the phoneidoscope : instead of the frail lamina of soap-suds she has a stretched membrane of india-rubber to receive the vibrations, and on this is spread a thin layer of some pasty substance which will retain the record made by the vibrations of the membrane. These voice-flowers are not the simple visual forms corresponding with the vibrations of the air set in motion by the voice. The waves generated in the closed bow of the eidophone are reflected again and again from the sides of the vessel. The volume of air enclosed has its own rate of vibration ; the stretched membrane has also its own rate, which in turn is modified by the character and thickness of the paste spread upon it. Added to these are molecular forces of cohesion and adhesion between the particles of paste, and again between

the paste and the membrane. The form which grows into shape is the resultant of all these complicated forces, and, in some instances, new elements of change have been added. A glass plate is placed on top of the vibrating membrane and moved over it. We have a new body introduced with its proper rate of vibration, besides a mechanical motion further to complicate the problem.



FIG. 5. Seaweed or landscape form



Serpent form.

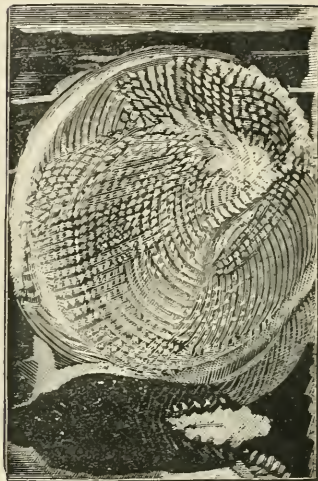


Pansy form.

FIG. 6. Mrs. Hughes' Voice Figures.



Tree form.



Cross vibration figure.

FIG. 6 continued. Mrs. Hughes' Voice Figures.

The results are very wonderful and beautiful, and open up a field for investigation which is most interesting ; but so far we have the resultant of many forces, not one of which has been weighed and measured. In a letter Mrs. Hughes, replying to some questions asked in the hope of greater accuracy, says : "The notes producing the figures vary necessarily with the weight of material used and the tension of the membrane, so that any one note may, under different circumstances, produce different figures, and conversely, different notes may, under different circumstances, produce similar figures."

The daisy forms were sung into shape, she says, by extremely low notes very softly sounded, some of them by A in the first space of the bass clef—a wonderful note to be reached by a woman's voice, whose highest note is the B-flat above the treble clef, a compass of over three octaves. Sometimes geometrical forms not given in the illustrations were produced by the highest notes of her voice, while the serpent, fern, and tree forms were made by singing her middle notes with great intensity.

Among some of the first experimenters of hearing with the eyes were Messrs. Lissajous and Duhamel, whose researches in that line are known to all of us. The more recent men who worked in this field are Leon Scott and Dr. Koenig. The first is the inventor of the phonautograph, whose instrument gave a more comprehensive sound-writing. The latter's gave an impressive means for making sound visible by a compound series of flames produced by a single burning jet connected with two or more tubes, and combined with a series of resonators ; this has been exceedingly serviceable in the elucidation of those obscure qualities of sounds by which he was enabled to distinguish different voices and instruments, even when the pitch and intensity of the notes were the same.

It is useless to dive into the minute description of these apparatuses, etc., as they may be found in all works on modern physics.

Early last April I had occasion to apply the principles demonstrated by the work of Chladini and Mrs. Hughes to another and a highly important branch of our science. The results of these experiments will probably be made known to the members of this congress by my colleague, the distinguished American physician, Dr. George Engleman, of St. Louis, with whom I was engaged in the task of bridling the faradic current, and accurately measuring and calculating the number of interruptions of the faradic machines used by our electro-therapeutists, and observing the physiological action at the various rates of interruptions. Dr. Engleman, as I understand, will detail the exhaustive research he has made in this direction in the section of electro-therapeutics.

By means of sensitive diaphragms, and a dry powder, like lycopodium, I obtained visual pictures of regular geometric shape, corresponding accurately to the number of breaks in the current. In this instance I employed a hollow cylinder about three inches in diameter and about six inches long, over which I stretched an elastic membrane.

Upon the centre of this membrane a small part of dry lycopodium was dropped, and the cylinder was placed upon the diaphragm of a telephone receiver, the open end next the diaphragm. With each change in the number of interruptions in the faradic current the powder assumed a different geometric form, and we were thus enabled to calculate the number of interruptions with absolute accuracy, as they ranged from 3000 to 50,000, and, as I have since learned, up to 102,000 per minute, some of the figures resembling those of Hughes and Chladini.

When sonorous undulations impinge upon the delicate diaphragm of a phonograph the latter is set in vibration. Its particles move to and fro in some way or other. The complexity of their motion will depend upon that of the air from which it was derived. This brings me to what I have to say of the phonograph itself.

In the annals of modern inventions the phonograph, and its inventor, Thomas A. Edison, will always occupy a foremost place. Years ago, had a scientist had the temerity to proclaim that he could record and reproduce human speech, the sounds of music and other living tones, and preserve them for ages just as the pathologist guards his specimens from the ravages of time, he would have been proclaimed a sorcerer, and perhaps burned at the stake as were the so-called witches in my own country only two centuries ago. How times have changed! I need not rehearse the early trials and tribulations of the illustrious gentleman whose ideas, crystallized in tangible form, are before you. It would simply be a repetition of the fortunes of all the great observers whose work has become historic. He fought against almost insurmountable obstacles and overcame them. Let me briefly recount the story of the discovery of the phonograph.

Edison's early phonograph was founded upon the discovery that if a delicate diaphragm or sounding-board is provided with a sharp point of steel, its vibrations under the sound of the human voice will cause the sharp point or stylus to make a series of impressions or indentations upon a sheet of wax or other analogous material passed beneath it. Such

indentations, though microscopic, are sufficiently defined to cause similar vibrations in the diaphragm, if the stylus is again passed over the furrow of indentations, and this reproduction is loud enough to be distinctly heard. Thus, the phonograph, in its primitive form, consists of a little sounding-board carrying on its under surface a needle point, and a sheet of wax so held as just to touch the needle. The sound-waves of the voice cause the sounding-board or diaphragm to vibrate with a rapidity varying with the pitch of the note.

If the wax sheet was made to move slowly along while the sound-waves of music, talking or singing were allowed to impinge upon the sounding-board, the result was found to be a continuous line of minute indentations, corresponding in depth and geometric form with the outline of the original sound-waves.

These lines were continued side by side until the smooth surface of the sheet was covered over with indentations.

This done, on raising the stylus and the diaphragm, and again placing it in the first furrow of indentations, the stylus as it travelled through the series of lines caused the sound-board again to vibrate, sending out an exact repetition of the sounds as they were originally impressed in the wax. Although somewhat changed in pitch, intensity and quality, they were yet of sufficient accuracy to demonstrate the possibility of recording and reproducing living sounds.

Photographs and measurements of these tracings of the sound-waves on the wax cylinders, etc., were recently made by Hermann, of the Königsberg Physiological Institute, and are of great interest in the study of the physics of sound.

The defects of the first phonograph were so great that Edison found it impossible to interest capitalists in perfecting it. At the same time eminent men in Europe were not wanting, who predicted great things for the phonograph of the future. What it accomplished was so wonderful that inventors were tempted to work over it.

But the phonograph of to-day, the novel and remarkable instrument, has passed much of its experimental stage. It is now practically successful in every respect, and must be regarded as instrumental in opening up a new field for scientific research, and making one more application of science to industry. Its aim is to record and reproduce speech: to make a permanent record of vocal or other sonorous vibrations: to recreate these vibrations in such a manner that the original vibrations may be again imparted to the air as sounds.

Notwithstanding all that has been said against the properties of the sounds reproduced by the phonograph, there is no doubt but that they are reflected in absolute integrity, but somewhat decreased in volume. In other words, I mean to say that the record of a sound as it is given out, or as we hear it coming from the phonograph, is an exact miniature of the original.

And this is easily explained if we bear in mind the fact that the diaphragm can only record those wave pulses which are caught up and encompassed by the recording trumpet. The others lose themselves in space, yet the pitch and quality remain unchanged.

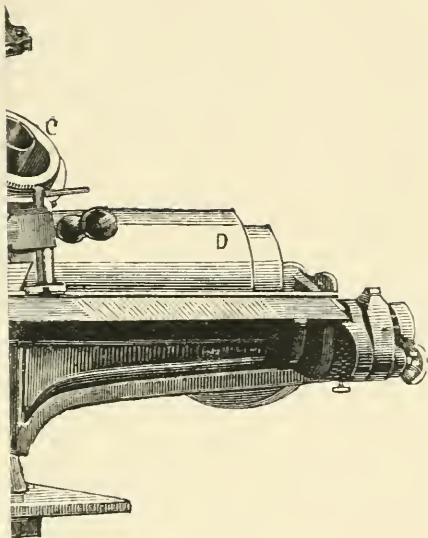


FIG. 7.

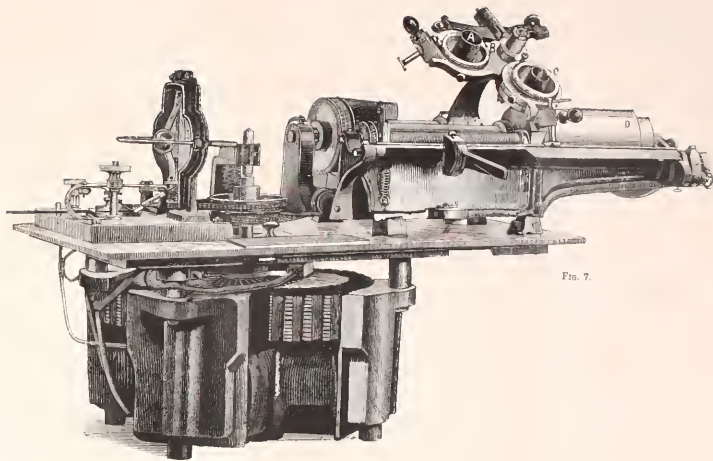


FIG. 7.

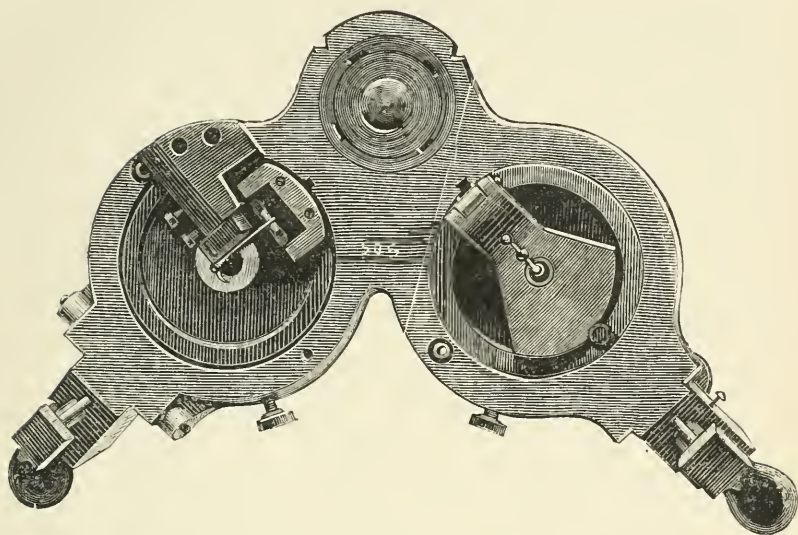


FIG. 8.

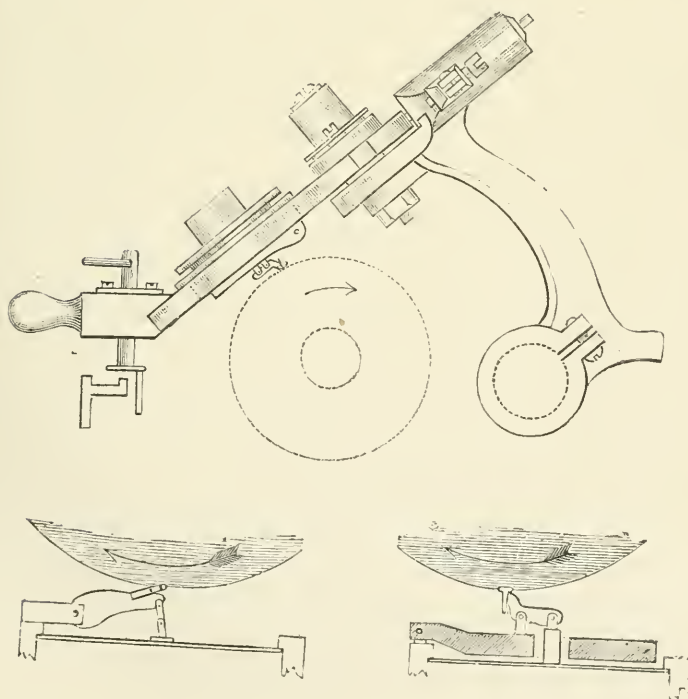


FIG. 9.

The phonograph is really a natural outcome of the telephone, but, unlike any form of telephone, it is mechanical and not electrical in its action.

The following anecdote is told by M. Paskos, Mr. Edison's agent, who presented the first phonograph for exhibition before the academicians of Paris. It was a curious spectacle to witness the expression of the faces of these academicians when M. Paskos caused the wonderful instrument to speak. A murmur of admiration was heard from all parts of the hall, a murmur succeeded by repeated applause. The learned Academy, generally so cold, had never before abandoned itself to such enthusiasm, yet some members of a sceptical turn of mind, instead of examining the physical fact, ascribed it to moral causes, and a report soon ran through the room which seemed to accuse the Academy of having been mystified by a clever ventriloquist. Certainly the spirit of ancient Gaul is still to be found among the French, even in the Academy. One said that the sounds emitted by the instrument were precisely those of a ventriloquist. Another asked if M. Paskos' face and lips, as he termed the instrument, did not resemble the grimaces of a ventriloquist. A third admitted that the phonograph might emit sounds, but believed it was much helped by the manipulator. Finally, the Academy requested M. du Moncel to try the experiment, and, as he was not accustomed to speak into the instrument, it was unsuccessful, to the great joy of the incredulous. Some members of the Academy, however, desirous of ascertaining the real nature of the effects, begged M. Paskos to repeat the experiment before them again under such conditions as they laid down for him. M. Paskos complied with this request, and they were absolutely satisfied with the result. Others still remained incredulous, and it was necessary, before they accepted the fact that speech could be reproduced in so simple a way, to give further demonstration.

The anecdote I have just related cannot be interpreted to the discredit of the Académie des Sciences, since the Academy is bound to preserve the true principles of science intact, and to accept startling facts only after careful examination. Owing to this attitude, all that emanates from the Academy can be received with complete confidence, and we cannot approve too highly of reserve which does not give way to the first impulse of enthusiasm and admiration.

Its present achievements in recording music are wonderful. The phonograph will reproduce any kind of music—singing, the piano, violin, cornet, oboe, etc.—with a beauty of tone and accuracy astonishing to the musician. It is possible also to magnify musical sounds without distorting them, as often happens where speech is concerned. Thus, when a *musicale* is arranged, the phonograph is put up so as to be heard one hundred feet away. Even should the phonograph never reach greater perfection than its present stage, which is hardly possible in this age, it is and will continue to be of the greatest use to musicians, elocutionists, authors, editors and physicians. To this last-named profession, of which I am a member, I have been the means of directing their attention to the practical use of the phonograph in medicine.

For several years past I have devoted considerable time to studying the

uses to which it may be put as a recorder of the sounds of disease and organs in health, upon which the physician depends so much for the accuracy of his diagnosis. Already I can say, notwithstanding its many imperfections, the phonograph is made to record many of the characteristic sounds of disease of the respiratory apparatus. For example, when in good voice the vocal expression of singers may be recorded and kept for comparison with the sound produced in case the vocal bands are affected. Time and again have I realized great benefit from the phonograph of tenors, baritones and basses among my patients, and not only have thus been able to recognize the difference in shade of tone and quality, and thus direct my attention to remedying the defect, but patients have also been able to recognize the deterioration of their voices from the normal standard themselves. This is one of the reasons why I desire to forcibly place before you the possible advantage the phonograph possesses in the perfection of elocution and singing, and to laryngologists in particular.

As a specialist in the department of medicine involving diseases of the throat, nose, and chest, I owe much of what little success I have had to the phonograph. Naturally my practice brings me into direct contact with celebrated people of high vocal culture, many with already fully trained voices, and so from the outset the phonographs which I made a standard of singing, speaking, etc., represented a condition very near the standard of perfection, which both teachers of singing and elocution are striving to attain. The excellent artists whose records I have taken, and treasure very much, were those educated in singing in the various methods of the German, Italian, and French schools, and representing over and over again these phonographs I have been able to detect readily any change or oncoming change in the normal action of the vocal bands. It is astonishing to hear the difference in the methods that the special training of one of these schools gives to singers, to actors and elocutionists; and more astonishing is it to compare singers of a mixed school with those whose singing is simply a natural exponent of fine vocal organs *plus* the training. The music that is in the well-trained artist rings forth its melody in pure musical sound from out of the indented pulse waves imprinted on the cylinder of wax. By utilizing these for a comparative study with the lesser natural and other voices, I have reached much profit from the study of the different shading of tones and quality possessed by their vocal organs.

Mr. Edison's intention is now nearly fulfilled in his being able to manufacture a quantity of instruments as perfect as the best of the present experimental machines, and to make them so automatic in action and so easily adjusted that everyone who uses a sewing-machine, or typewriter, or a telephone, can use the phonograph. We concede at once that a wonderful field is before it.

The price of phonographs is nominal, and the new wax cylinders upon them cost scarcely more than writing-paper. Once a cylinder has been engraved or has had a message recorded upon it, it can be passed through the phonograph any number of times, apparently without deterioration. I possess some valuable phonograms which have been read, sung, and played thousands of times by the phonograph, and no special indication

of wear is observable. Finally, bear in mind that having once obtained a good phonogram it can be multiplied and duplicated at small cost. What a wonderful prospect opens before us ! This duplication of phonograms is not known to us as yet, but no doubt experiment will give it to the public, and duplication will be as common as in photography.

Imagine what the phonograph will do for the man on the borders of civilization. It will supply him with books in a far more welcome shape than print, for phonographs will read themselves. The mail will bring him the latest play from London or opera from Vienna. If he cares for political speeches, he can have the *Congressional Record* in the shape of phonograms. It is possible even to imagine that many books and stories may not see print at all ; they will go into the hands of their readers or hearers rather as phonograms. But think what a musical critic can do for his public. He can give whole arias from an opera, or entire movements from a symphony, by way of proof or illustration. The very tones of an actor's or singer's voice might be reproduced in the morning notice of last night's important dramatic or musical event.

In music, as already hinted, the value of the phonograph in its present stage is indisputable. Musicians are divided, probably always will be, as to the manner in which certain famous symphonies ought to be conducted. The metronome marks used by Beethoven are, at best, but uncertain guides, while no written directions as to dynamic values, expression, etc., are worth much. The phonograph will make it possible for the musician of the future to know exactly how our composers wished their music given, for it will repeat that music as played to-day with every shade of expression, with all its infinite changes of time. Moreover, the phonograph offers to the composer that long-sought instrument—an automatic recorder of improvisation upon the piano or other instrument. In the far-off future, when our descendants wish to compare our simple little Wagner operas with the complex productions of their own times, requiring perhaps a dozen orchestras, playing in half a dozen different keys at once, they will have an accurate phonographic record of our harmonic simplicity. In logic we say that where a premise is established the deduction is evident. So what can be done in one instance can be done in all other similar instances. Those persons who smile incredulously when it is said that the perfected phonograph will do away with letter-writing, will read to us, sing to us, teach us foreign languages with their proper accents, teach us different methods of singing, elocution, give us books, music, plays, speeches, at almost no cost—become a constant source of instruction and amusement—must have forgotten the ridicule they heaped upon the rumour that an American inventor proposed to talk from New York to Chicago. The achievements of the phonograph will be no less wonderful than those of the telephone.

Marvellous as this instrument is, it is still quite new, and it is impossible to say to what degree of perfection it may yet be carried. It has already opened the door to an entirely new and untried field in the realm of sound. It is a new instrument in the hands of science, wherewith to search out laws in Nature still unknown. Already it has suggested

many valuable uses. Undoubtedly it is the most remarkable invention of this century.

If time permitted I should talk more in detail regarding the use of the phonograph as a teacher of singing, elocution, etc., but from the demonstration of phonograms one must be satisfied of the truth and of the value of the phonograph.

I am still in hopes, notwithstanding the fact that at present the microphone is very unsatisfactory in its workings in many respects, to be able to record the sounds of the heart and the respiratory tract both in health and disease. The value of such record, I need not tell you, would go a great way towards the practical education of our medical students in the groundwork of physical diagnosis.

I have already made several records of pathognomonic sounds, but my work, owing to the pressure of time and the responsibilities of a large practice, is still so incomplete that I hesitate to present it to such an august body of distinguished medical men.

At the next congress I may be able to show you the cabinet of records, which will demonstrate aurally these special sounds of disease of the deeper air-passages and heart, just as we hear them in the hospital ward and recognize them from the descriptions in our books of lessened or intensified pitch and changed quality.

In my own specialty the phonograph has been of much service. In all diseases affecting the vocal bands we are apt to have a change in the character of the vocal sounds. These sounds in not a few instances are pathognomonic, but as we go on in our experience and observation they will become extensive enough to have an accepted classification, without which phonographic records would signify little. Nevertheless, for the expert, I can say safely that to him the phonograph must prove of great value in this branch. With a complete microphone, as I hope and feel it can be perfected, both the classification and recording of the more inaudible sounds will be made so that all of us, even the general practitioner, will be able to make his diagnosis of these internal pathognomonic sounds of heart and lungs more positive.

As for the more audible sounds, like coughs, nasal obstructions, laryngeal growths, laryngeal obstructions—like stenosis, hoarseness, defection in speech, and many of an allied kind—the phonograph is, beyond a doubt, the instrument for recording them to perfection.

To my American colleagues and to those of other countries who may chance to come to my city I extend a cordial invitation to visit my workshop, which, unfortunately, I could not transport, and see the work as it has progressed up to this time.

I shall ever be ready to demonstrate and show you how far I have succeeded, and so give you the ocular proof of what I have laid claim to in this paper.

RETROSPECT OF THE YEAR 1894.

DISEASES OF THE NOSE.

THE importance of the correct diagnosis and efficient treatment of diseases of the nasal passages and their accessory sinuses becomes more important from year to year. The bearing which nasal affections have upon general constitutional affections is of itself sufficient reason for explaining the wide-spread interest which is now taken in all morbid states of the nasal mucosa. Hence the vast amount of literature which has appeared during the past year. In the following short *résumé* a few of the more important publications will be dealt with.

DEVIATIONS OF THE NASAL SEPTUM AND NASAL SPURS.

In the treatment of deviations of the nasal septum, Moure (*JOURNAL OF LARYNGOLOGY*, May, 1894) recommends the employment of electrolysis. The advantages claimed are that the method is rapid, succeeds at one application, is not painful, and causes little hæmorrhage. When the deviation is accompanied by marked thickening, electrolysis may be associated with galvano-puncture. In the case of small spurs electrolysis is usually sufficient.

Botey (*JOURNAL OF LARYNGOLOGY*, June, 1894), in discussing the treatment of vertical deviation of the nasal septum without thickening, says that (1) the treatment cannot be conducted with electrolysis, and still less with the galvano-cautery; (2) in the destruction of the projecting portion by either of these two agents there is necessarily produced a more or less considerable perforation of the septum without correction of the deviation; (3) the best treatment is the method of sub-perichondrial resection of a portion of the quadrangular cartilage, followed by consecutive replacement.

GROWTHS FROM THE NASAL SEPTUM.

A considerable number of growths arising from the nasal septum have been recorded during the year. Victor Lange (*JOURNAL OF LARYNGOLOGY*, February, 1894) has seen six such cases, one of them being a soft fibroma. He recommends their removal with the sharp spoon.

Garel and Collet ("*Ann. des Mal. de l'Oreille*," November, 1893) have noted two special characteristics of such septal growths, (1) their great vascularity, and (2) their almost constant situation upon the cartilaginous septum as evidenced by the pavement epithelium covering them.

TUBERCULAR NASAL AFFECTIONS.

Chiari ("*Archiv für Laryngol.*," Band I., Heft 2) has recorded several cases of tuberculomata of the nasal mucosa, and considers that these tumours are caused by tubercular infection of small septal wounds. He advises complete extirpation.

Herzog ("*American Journ. of Med. Sciences*," December, 1893), in

an analysis of eighty cases, remarks that twenty of the cases were probably instances of primary nasal tuberculosis. In thirty-six of the cases ulceration predominated, in twenty-nine the tumour form of growth appeared. In eight the condition was a mixed one. In fifty-three of the cases the site of the lesion was the septum nasi (usually the cartilaginous portion); in eleven the lower turbinated body; in three the middle turbinate; in four the inner side of alæ; and in four the floor of the nose. The majority of the cases occur between the ages of eleven and forty. In appearance the tumours are round in shape, grey or greyish-yellow in colour, and are prone to bleed. The ulcerations are usually superficial. The treatment should consist in free removal, scraping of point of origin, and in cauterizing with acids or a galvano-cautery point.

Farlow ("New York Med. Journ.," November 4th, 1893) advises in such cases curetting and the free use of lactic acid.

AUTOGRAMS OF NASAL RESPIRATION.

Sandemann (JOURNAL OF LARYNGOLOGY, February, 1894), in order to depict the amount of nasal stenosis in any given case, adopts the following method. The patient is told to breathe through the nostril or nostrils upon a plate of glass. The warm breath saturated with moist vapour forms a deposit upon the glass, producing a pneumatype of varying figure. If nasal obstruction be complete no figure will be produced; if only partial then the figure is smaller than its fellow, and shows a deviation as when spurs are present. In order to produce a permanent impression pieces of pasteboard covered with slate paper are used. Before the breath has time to evaporate a fine powder is dusted over the impression and then fixed by a spray of fine varnish.

VIBRATORY MASSAGE OF THE NASAL MUCOSA

formed the subject of a discussion during the sittings of the laryngological Section at the International Congress held in Rome.

Braun (JOURNAL OF LARYNGOLOGY, May, 1894), whose name is now so identified with this method of treatment, employs two principal forms of movement—a stroking and a vibration—but the two are so combined that every portion of the mucous membrane is both stroked and massaged. He has employed the method during the last seven years, and has subjected nearly three thousand patients to his manipulations. He claims to have had excellent results and to have cured sixty-two cases of *ozæna*.

Laker and Dionisio also strongly support this line of procedure, which, however, has Chiari's condemnation, as being of no more value than the simple application of pigments. The vibratory movements may be imparted by means of the hand, or a special electro-motor apparatus may be used. Before the *séance* cocaine should be applied to the mucous membrane and a large number of suitably constructed probes be ready to hand.

CYSTIC TUMOURS.

A few examples of these somewhat rare tumours have been recorded. J. Dunn ("New York Med. Journ.," February 24th, 1894) has described

a case which he considered to have been a retention cyst springing from the floor of the nose.

Knapp (*JOURNAL OF LARYNGOLOGY*, May, 1894) reports a case cured by Diffenbach's operation.

Milligan (*JOURNAL OF LARYNGOLOGY*, December, 1894) obtained a cure in a case of cystic tumour of the left nasal passage by adopting Ollier's operation and dissecting out the cyst. The principal forms of treatment in such cases are : (1) evacuation by paracentesis ; (2) destruction of the interior of the sac by heat or chemicals ; (3) extirpation.

MALIGNANT GROWTHS.

Many cases of malignant growths, springing from the nasal mucosa or from the mucous membrane lining the accessory sinuses, have been recorded, but no new light has been thrown upon their etiology or upon improved methods of treatment.

NON-INFECTIOUS CROUP OF THE NASAL MUCOUS MEMBRANE.

This subject has been dealt with at some length by Schiffers (*JOURNAL OF LARYNGOLOGY*, January, 1894). The clinical importance of differentiating between non-infectious membranous inflammation and such conditions as nasal diphtheria cannot be over-estimated. In the non-infectious inflammatory affections the membranous deposits which are formed are of a whitish-yellow or grey colour. In consistence they are tough, opaque, and resistant. Microscopically the membrane is composed of a reticular stroma of fibrin, enclosing in its meshes embryonic cells and white blood corpuscles. Specific bacilli are absent. This croupous exudation may be produced by a spasm of certain vessels of the nasal mucosa as the result of some reflex irritation, *e.g.*, cold acting directly upon the part or upon the surface of the body. The vaso-motor nerves play the essential rôle, there being first of all a spasmodic contraction followed by paralysis of the vascular walls. Hypertrophic conditions of the inferior turbinated bodies will at times be a causative factor, as also the too energetic use of the galvano-cautery within the nasal passages. In certain cases observed by Delstanche the membranous intra-nasal cylinders were produced without the supervention of any such general symptoms as fever, &c.

Recurring attacks seem fairly common. An excellent illustration of this has been published by Burn Murdoch (*JOURNAL OF LARYNGOLOGY*, October, 1894), occurring in a patient aged thirty-three. Six separate attacks were observed. The membranous exudation, which was very freely produced, consisted mainly of fibrin containing in its meshes numerous round cells. No bacilli were found, only a few micrococci of no special interest being present.

ATROPHIC RHINITIS.

The large number of papers published upon this subject testifies not only to the interest evoked in trying to unravel the mysteries of this complex disease, but also to the desire which exists to formulate some

form of treatment capable of affording better results than has hitherto been the case.

Laurent (*JOURNAL OF LARYNGOLOGY*, January, 1894) has been unable to find the constant presence of any definite organism.

Grünwald ("Münch. Med. Woch.," 1893, Nos. 43 and 44) emphasizes the value of examination of the nasal accessory sinuses, and attributes many cases to pathological conditions arising within these cavities.

Wingrave (*JOURNAL OF LARYNGOLOGY*, February, 1894), in an erudite paper upon the subject, defines atrophic rhinitis (*ozæna*) as "a pro-gressive and persistent form of dry rhinitis, characterized by a shrinking of the mucous membrane, which tends to invade contiguous chambers, and is accompanied by the formation of crusts with more or less fœtor of a special character." Histologically the main changes he observed were :—

(1) Transformation of the columnar ciliated and special olfactory cells into stratified squamous epithelium.

(2) The disappearance of the hyaloid basement membrane.

(3) The presence of special hyaloid bodies and pigment masses.

(4) Changes in the glands.

(5) Changes in the lymphoid tissue and blood vessels.

(6) Changes in the bone.

The hyaloid bodies present appear to increase in number with the duration and severity of the disease. Later on they break up into minute refractile bodies, resembling spores imbedded in a transparent matrix. The disease appears, or at least is most frequently observed, about the age of puberty. Females are far more frequently affected than males. The author offers an ingenious theory as to the cause of the fœtor. He remarks that the nasal mucosa is a transformed epidermal structure derived originally from an involution of the buccal epiblast. During the course of a case of atrophic rhinitis in the stratification of the surface epithelium a structural reversion to the primitive type takes place, and in the gland epithelium the establishment of a perverted function—in other words, the nasal mucosa becomes converted into a cutaneous structure, with a corresponding change of secretion. Bromidrosis and rhinal fœtor have a close kinship, and in this kinship may be found an explanation of the peculiar odour observed in such cases.

Hopmann (*Münch. Med. Woch.,"* 1894, No. 3) believes that the shortness of the nasal septum and the breadth of the nasal cavity are important factors in the production of *ozæna*. In some cases he thinks that the fœtor is due to the presence of caries. He attaches considerable value to systematic examination with the probe.

Bresgen ("Münch. Med. Woch.," 1894, Nos. 10 and 11) agrees with the views expressed by Grünwald, and considers that *ozæna* must be treated by the treatment of diseased conditions nearly always found in the accessory sinuses.

Tissier ("Ann. de Med.," January and March, 1894) considers atrophic rhinitis to be due to a necrotic osteitis of the ethmoidal or sphenoidal sinuses. Treatment should in the first place be directed to these cavities. The exact *rôle* which disease of the accessory cavities

plays in the production of atrophic rhinitis and the frequency of its occurrence must be considered questions still *sub judice*. The importance of, in all cases, examining these cavities cannot be gainsaid.

AFFECTIONS OF THE NASAL ACCESSORY SINUSES.

The study of these most interesting and important cavities has been much stimulated during the past few years by the introduction of several new methods of diagnosis and of treatment.

Frontal Sinuses.—In empyema of these sinuses Mayo Collier advises a vertical incision over the centre of the particular sinus implicated, and removal of a small disc of bone by a specially constructed small trephine. Many surgeons satisfy themselves with opening the sinus at the inner corner of the orbit by means of a small chisel and mallet. A large and free opening should always be made into the nose, so that efficient drainage may be effected. Washing out the sinus *per vias naturales* finds a few advocates, and in cases of special difficulty it has been suggested to remove the anterior end of the middle turbinated body. Transillumination of the sinus or sinuses has been used in many cases, and in some has afforded valuable information. Probably the time will come when in doubtful cases surgeons will not hesitate to tap the sinus from the outside for purely exploratory purposes.

Maxillary Antrum.—A few cases of acute inflammation of the mucous membrane lining the sinus have been recorded, following attacks of influenza, Semon ("Brit. Med. Journ.," February 3rd, 1894), Lennox Browne ("Brit. Med. Journ.," March 31st, 1894). Mygind (JOURNAL OF LARYNGOLOGY, January, 1894), after an elaborate investigation of the antra of two hundred healthy individuals by means of transillumination, has arrived at the following conclusions :—

In thin, slightly-built individuals, especially females, the transillumination of the parts is very intense. The effect upon the pupils varies. At times they are highly illuminated, at other times they remain dark. In many of the cases examined the effect upon the two pupils was unequal, while in four per cent. of the cases one pupil was distinctly—although slightly—illuminated, whilst the other remained perfectly dark. The various media through which light passes before illuminating the eye should be borne in mind, while the following circumstances claim attention :—

1. The consistency of the mucous membrane of the palate.
2. The thickness and structure of the bones of the face.
3. The consistency of the mucous membrane of the antrum of Highmore.
4. Abnormalities in the size and shape of the antrum.
5. The consistency and extent of the fatty layers of the orbits.
6. The physical condition of the bulbus oculi.

The value of transillumination as a certain diagnostic method would seem to depend upon the question as to whether the illumination of the eye is a reliable sign of the absence of pus in the antrum of Highmore. If it be found that pus in the antrum always prevents the electric light from penetrating from the mouth into the eye, then the method will

always be a valuable means, although only capable of giving a negative result.

Schuster (*JOURNAL OF LARYNGOLOGY*, January, 1894) insists upon the importance of examination with the probe in cases of suppuration of the accessory cavities.

Burger ("Rev. Mens. de Laryngol.," January 1st, 1894) attaches great diagnostic value to illumination of the eye, and to the signs which it furnishes—the red spots (indicating the pupils) and subjective luminous sensations, especially the latter.

Gradenigo (*JOURNAL OF LARYNGOLOGY*, July, 1894), in considering the question of latent empyema of the maxillary sinus, says that many of these collections are brought about by the diffusion to the lining of the sinus of an inflammatory process in the nasal mucosa. The latter is cured while the mucous membrane of the antrum remains chronically inflamed. He says:—

1. Muco-purulent collections in the maxillary sinus are met with frequently—in one series of cases in seventeen per cent. ; in another series twenty-six per cent.

2. The absence of lesion of the parts and the frequent bilateral occurrence of the affection authorizes us to place these collections in a separate group from true empyemata.

3. In all probability these collections are not of dental, but of nasal origin.

4. Cysts in the mucous membrane of the maxillary sinus containing serum or pus were found in two per cent. of the cases.

Dundas Grant (*JOURNAL OF LARYNGOLOGY*, December, 1894), in speaking of the treatment of antral suppuration, advises the intra-nasal method of opening the sinus by means of Kräuse's trocar (1) in all cases arising from intra-nasal causes ; (2) in all cases in which there is no abscess or disease of the teeth.

During the discussion upon the treatment of suppuration of the maxillary antrum at the Bristol meeting of the British Medical Association in August, Scanes Spicer (*JOURNAL OF LARYNGOLOGY*, October, 1894) advocated the following method of operation :—After having placed the patient under an anæsthetic, a crucial incision is made over the canine fossa, and the flaps reflected by means of a raspatory. A large opening is then made in the anterior wall with mallet and chisel according to Robertson's method (*JOURNAL OF LARYNGOLOGY* and "*Lancet*," 1892). Care is taken that the bone is chipped away down to the level of the floor of the antrum and a groove established down the alveolus. The opening is made of such a size as to admit the finger, and so allow of digital exploration of the cavity. The interior of the cavity is now curetted so as to remove every trace of soft fungous granulation tissue, abscess sac, polypi, cysts, necrosed bone and atheromatous material. The finger is now introduced into the antrum to act as a guard while Kräuse's trocar and canula are passed down the inferior meatus of the same side to a point well behind the opening of the nasal duct. One or more perforations are now made through the outer nasal wall into the antral cavity. The antrum and nose are now irrigated with boracic

lotion and the cavity of the antrum packed with creolin gauze for forty-eight hours, the gauze being made to tightly fit and distend the bucco-antral opening until the tissues around are matted together and the passage established. After forty-eight hours the gauze is removed, and no form of mechanical drain is used.

Garel (*JOURNAL OF LARYNGOLOGY*, August, 1894) strongly recommends opening the antrum through the inferior meatus. He remarks that the alveolar operation should only be thought of when other methods cannot be used, and also that opening by the canine fossa and curetting are to be reserved exclusively for rebellious cases which have resisted all treatment by irrigation.

Ethmoidal Sinuses.—Charters Symonds (*JOURNAL OF LARYNGOLOGY*, October, 1894) advises reaching the ethmoidal cells by means of an external incision carried along under the supra-orbital ridge.

Greville Macdonald makes the suggestion that in cases of ethmoidal suppuration the patient's head should be allowed to hang backwards over the end of a couch, so as to assume an inverted position; the nasal cavities can now be completely filled up with fluid, and thus the summit and recesses of the cells thoroughly irrigated. This mode of treatment requires that the patient be kept strictly under observation, as severe neuralgia and rapid rise of temperature have been known to follow its employment.

Sphenoidal Sinuses.—Nothing of any special moment has been published regarding these cavities. Dundas Grant recommends washing out the sinus, in cases of suppurative inflammation, by means of a specially long canula. In order to open the sinus freely for the purposes of curetting a small spoon may be introduced along the anterior nasal passage, or a curved trocar may be passed, under proper rhinoscopic illumination, from below upwards through the post-nasal space.

Coryza Caseosa.—McBride (*JOURNAL OF LARYNGOLOGY*, October, 1894) records two cases of this interesting and rare affection, and refers to the literature of the subject.

TURBINAL VARIX.

Wingrave (*JOURNAL OF LARYNGOLOGY*, October, 1894) defines turbinal varix as a particular form of hypertrophy which involves the posterior half of the inferior turbinated body, and characterized by a permanent distension of the venous sinuses. Different varieties are found:—(1) vascular; (2) mucoid; (3) lymphoid; (4) glandular. In the treatment of the condition special merit is to be attached to the employment of Carmalt Jones' ring knife.

W. Milligan.

DISEASES OF PHARYNX, NASO-PHARYNX, ETC.

Each year finds a review of the contents of the Journal a matter of ever increasing difficulty. The elaboration of detail in every branch—in the histology, pathology, and treatment of each subject—is characteristic, and scarcely lends itself to a cramped reproduction, which will not

be attempted. All that is necessary here is to emphasize and isolate for a moment's notice what is most striking and practical of the literature of the past year. The increasing size of the Journal is to be remarked upon: this indicates that as month succeeds month an effort is being made, and successfully, to give, as fully and accurately as may be, reports of the meetings of the principal societies dealing with the branches specified. In no sense, however, is it a mere review, for it can count amongst its list of contributors of original articles many honourable names.

NASO-PHARYNX, ADENOIDS, ETC.

During the year that has passed numerous articles are found to have reference to disease of the adenoid tissue of the naso-pharynx, amongst which the most important is perhaps that of Dr. Sims Woodhead, in the "*Lancet*," October 27th, 1894. This communication, entitled "*The Channels of Infection in Tuberculosis*," which must be read *in extenso* to be fully appreciated, forcibly demonstrates the danger to the organism of the presence of diseased lymphoid structure, and notably of the existence of diseased pharynx or tonsil. In the mouth and nasal cavities micro-organisms are always present, and are, under healthy conditions, more or less decimated by the normal secretions of the parts, or they are taken up by the lymphoid cells and cavities into the adenoid tissue, and there destroyed, even the tubercle bacilli. When, however, the epithelium guarding the adenoid tissue becomes impaired or abraded, and when at the same time the lymphoid cells themselves are weakened, the micro-organisms enter, are taken up by the cells, but overpower these, and thus gain access to the parts beyond, which afford a nutrient medium for the bacilli. Clinical evidence of this has been afforded in past communications to this Journal.

This process of infection can be traced down into the neck and so on to the thorax by the mediastinal and post-sternal glands, and by the intercostal lymphatics and glands, and it is interesting in such cases to note how the lungs may be perfectly healthy until the glands at their root or on the pleura have become distinctly affected.

To put the truth of this reasoning beyond doubt, the interesting fact is referred to that in the guinea-pig, where little or no definite lymphoid structure exists on the pharynx, early tuberculous affection of the neck is seldom met with, whilst affection of the mesenteric glands, with or without a primary lesion in the adenoid tissue of the lower part of the ileum or the cæcum, is of comparatively common occurrence, and this when the animals are fed with tuberculous material conveyed in a viscid or fatty vehicle. Enough has here been cited to show the rôle adenoid growths play in the propagation of tuberculous infection, and emphasizes the need for their speedy removal in order to safeguard the organism from a catastrophe much more serious than mere deafness or facial deformity. The paper is full of much suggestive reasoning, and shows how exact scientific research fully corroborates the necessity for procedures which clinical experience has long thought expedient.

Testimony to the other lesions caused by adenoid hypertrophy left to itself are abundant in these pages. It leaves a degree of hypertrophy, so-called Tornwaldt's disease, or an atrophic condition of the vault of the pharynx and Eustachian synechiæ, all of which conditions may have not only local, but also far-reaching effects upon other organs.

Newcomb ("Journ. Amer. Med. Sciences") refers to a case of fatal hæmorrhage after the removal of adenoids in a strumous lad, and recommends care even in the simplest surgical procedures. Chiari at the congress in Rome eulogizes the use of the cold wire snare introduced through the nares under a twenty per cent. solution of cocaine, applied on cotton swabs from before backwards, extending into the naso-pharynx. The snare is then introduced through the nares so as to entangle and remove the growths. This proceeding is on either side to be repeated from three to four times. The hæmorrhage is slight, pain is insignificant, and otitic complications never occur. With reasonable children no assistance is necessary; with the unruly an assistant and a sheet to wrap the child in are called for. A narrow build of the nose is unfavourable to the procedure. Otherwise, even in two-year-old children, the operation is possible. Several sittings are not required, and even flat growths can be removed by the snare.

The question of the treatment of naso-pharyngeal polypi, especially in France, occupies a prominent position. Excision by the palate, and leaving the incision open in the palate by which the growth is removed, is in favour. In this way recurrence may be watched for and treated in the early stages by slow processes, such as the interstitial injection of chloride of zinc, the galvano-cautery, or electrolysis. Verneuil, who was long opposed to conservative measures for the ablation of naso-pharyngeal polypi, now advocates, as eminently superior to others, the slow methods. A further modification might be introduced, based on the bearing other modes of operating have on the condition. There are a large number of benign and sarcomatous tumours met with in the naso-pharynx, pedunculated and with few attachments to neighbouring parts. For such the galvano-cautery snare, introduced through the nares or into the post-nasum by the mouth without touching the palate, may at first be relied upon. Many in this way are effectually and permanently cured, no recurrence taking place. In any case, after removal by the snare, let the post-nasum be closely scrutinized for recurrence. When such does betray itself, then have the palate split to facilitate observation and treatment by the slow methods referred to.

THE PHARYNX, UVULA. &c.

Rethi ("Archives of Otology") refers to the nerve roots of the pharyngeal and palatal muscles. The glosso-pharyngo-vagus and accessorius arise in three fascicles from the medulla oblongata. In the upper fascicle the motor fibres for the medulla stylo-pharyngeus, and principally the motor fibres supplied by the nervus laryngeus medius, take their course. The middle fascicle supplies the constrictors of the pharynx, also the levator veli palatini, palato-pharyngeus, and palato-

glossus. The motor fibres of the tensor palati mollis originate in the root of the fifth. The facial does not participate in the innervation of the muscle of the pharynx. Functional spasm of the muscles closing the jaws is referred to by Dr. Felix Semon as occurring in a clergyman, but only when talking. The movements of the lips, tongue, palate, and larynx were unimpeded. The localization of the source of this form of spasm is likely to be in the cortical or sub-cortical areas for the movement of chewing, localized in front and laterally from the cortical centres for the limbs. Unilateral irritation of one of these centres would produce bilateral spasm.

Spicer instances a case of stenosis of the fauces where the application of the cautery to bands extending from the pillars to the tongue set up ulceration (syphilitic), which for a time opened up the stenosis, so far as to allow of food being swallowed. As the parts healed, however, the stenosis returned. General authorities agreed as to the difficulty of treating stenosis, the result of syphilis in the parts. In such cases of adhesion of the soft palate to the posterior pharyngeal wall something is occasionally gained by first freeing these adhesions, and then suspending a triangular perforated flat plate of hard rubber between parts. The plate can be suspended in position by strings drawn out through the nares.

Ball relates a case of leprosy with throat lesions. Broad tubercles existed on the tongue, small nodules on the hard and soft palate, and an ulcer on the soft palate. The soft palate and pharynx were pale, uvula gone, and the posterior faucial pillars were adherent to the posterior pharyngeal walls.

A case of calculus of the soft palate is referred to by Parker, indicated by swelling and inflammation of the right side of the part, which felt hard to the touch. What looked like an ulcer of the palate was the protruding stone, the rest of which lay between the layers of mucous membrane. The stone, when removed, weighed fifty-four grains, and consisted of carbonates and phosphates of lime and potash, epithelial *débris*, spores, and *gladotrix* mycelium. Semon thought that the stone might have been started by some injury to the part by operation, Ball that it might have originally commenced in a tonsillar crypt and worked further into the tissues.

An interesting account is given by Park (New York) of the bacteria present in the human throat, and their relations to acute throat inflammations. He limited his remarks chiefly to streptococci, as they were most abundant in acute inflammations. During the use of mild antiseptic washes these micro-organisms became less numerous and indicated the need for these in throat diseases, which arose, perhaps, as often from germs present in one's own throat as from infection from others.

PHARYNX.

Glasgow deals with the case of a child, ten months old, who suffered from what he calls exudative pharyngitis, in which the fauces, uvula, soft palate, and pharyngeal wall were covered with whitish deposits. These

were glistening and elevated, but left no bleeding surface on removal. Aphonia was prolonged and dyspnœa urgent. Fluids passed through the nose when swallowing was attempted; deglutition was difficult. Glandular enlargement was wanting and in the deposit streptococci but no Loeffler bacilli were found. Glasgow, therefore, looked upon the case as one of "streptococcus throat." A suppurative otitis developed during convalescence. Hydrogen peroxide removed the deposit after three weeks' treatment.

P. W. Meyjes summarizes the causes of disturbances of speech in pharyngeal catarrh as follows:—Extensive lateral bands of granular pharyngitis in the arcus palato-pharyngeus; enlarged tonsils, principally with intense development of the follicles; increased follicles of the lingual base. Cauterization cured the first and last; incisions into the follicles cured the second, if these could not be removed by excision. A half per cent. solution of ichthyol promoted recovery after these measures. Neurosis laryngis is often due to the presence of these lesions referred to while neurotic cases complain not so much of speech as deglutition difficulties.

"Fish-bones in the Throat and what they suggest concerning Deglutition" is the title of a paper by Adolph Rupp, who states that the accident is rare, there being not one case in over seven thousand patients treated at the throat clinics of New York. Local troubles in the throat, especially in drunkards, are often thought to be due to foreign bodies. The best course to adopt is to thoroughly examine the throat with mirror and finger.

It is always to be remembered that no foreign body may be present, or again, two or more may be present. In one case a fish-bone found in the tonsil was said to have been there six years before, and had given rise to recurrent tonsillitis. Since its removal, four years ago, the patient has had no more such attacks. Dr. Rupp endeavours to prove that impaction of fish-bones is due, not so much to lesions in the throat, but rather to the position of the fish-bone or needle in the bolus itself.

A curious case of foreign body in the throat is referred to by Fischer. After eating rye bread, a man experienced pain in the throat, and at the same time noticed bleeding from the part. It was found that a bristle, which was present in the bread, had pierced the tonsil and uvula. The hæmorrhage ceased after extraction of the bristle. Sensation of foreign body in the throat is frequently met with in the case of hysterical girls.

TONSILS.

A brief reference under this head will be made to abscess and tumour, etc., of the tonsils, diphtheria and coccus affections of the tonsils coming under another section of the review. Abscess of the tonsil is generally recognized as a very troublesome affection, usually bilateral, one tonsil abscessing before the other, the whole course of the process usually extending over fourteen or eighteen days. During this period the patient, being unable to swallow, becomes weak, and sleep is interrupted by the collection of mucus in the neighbourhood of the oro-pharynx and glottis

It is not always clear how these abscesses arise in any case. Occasionally they develop in the stumps left after tonsillotomy, and now and then we are surprised by the development of an attack after the use of the cautery in the nose. Early evacuation of the pus aborts the attack and affords rapid and permanent relief to the patient. Cases are noted where, the abscess having been allowed to burst spontaneously, the track of the opening has again closed and reclosed, thus complicating greatly the duration and troublesomeness of the attack. On the other hand, it is noted that a clean and effective incision rarely closes, and, as a rule, puts an end to the process, the parts rapidly becoming restored to health. The indication, therefore, as well pointed out by Brannan ("New York Medical Record"), is early incision. Brannan says that the incision is to be made through the soft palate, unless the pus points elsewhere, and in great tension even without the formation of pus. The point of election for incision is a little above and external to the upper border of the tonsil. This point appears to be in the anterior pillar. After the parts have returned to health we notice that the course of the incision has really been through the tissues external to the tonsil, and into the epitonsillar space, which was infiltrated and everted by the pus pent up in it, and that the incision missed the edge of the anterior pillar.

Incision by a fine needle, or fine straight-backed knife, and subsequent dilatation of the abscess cavity by forceps, introduced closed and opened out as withdrawn, is recorded as the preferable means of opening the abscess.

Excessive hæmorrhage after incision into the tonsil, or about it, has been recorded, but not in all such cases was wound of a large artery found to have been caused by the knife. In some such cases the internal carotid was eroded or ruptured by pus, and the blood had freely escaped from the wound, but was pent up in the pharyngo-maxillary space. As a rule, there is no danger of wounding a large vessel. In deep-seated abscess, however, erosion of arteries may take place, and the arterial hæmorrhage should be immediately checked by pressure and subsequent ligation.

Bulkley ("Med. Rec.") gives an analysis of fifteen cases of chancre of the tonsil found amongst two thousand cases of syphilis. Of these, one hundred and ten were instances of extra-genital chancres, forty-nine being chancres of the lip. The most important diagnostic feature was the hardness of the tonsil to be made out by palpation, and also sub-maxillary and post-cervical adenopathy of the affected side. Syphilis arising from tonsillar chancre generally runs a very severe course. The modes of infection consisted in three cases in vile bestial practice with their own sex, in ten cases from kissing or a drinking cup, whilst in two cases no probable hypothesis could be made. The reviewer has known extensive mouth syphilis (tonsillar, etc.) brought about in white children in South Africa, as follows. The white child is given to a young negro nurse to be attended to. To keep the child quiet the nurse, after chewing some bread in her own mouth, puts the bolus into the child's mouth. As syphilis is rampant amongst the blacks of South Africa, especially in Cape Colony, this mode of infection is frequent.

Emil Mayer has effected a modification of Gottstein's curette to suit the treatment of follicular pharyngitis. He cures the whole pharyngeal wall, not touching the healthy mucous membrane. He completed the operation at one sitting. A tonsil punch has been introduced by Kelly, and its uses indicated by the author—principally in the case of a small irritating gland which the tonsillotome cannot seize. It is also useful in nervous subjects, and, with cocaine previously applied, little or no hæmorrhage results. Like a double curette, it bites off diseased tissue, but does not encroach upon the sound vascular tissue in the stump of the tonsil.

Simpson (New York) affords some considerations on the galvano-cautery puncture of hypertrophied tonsils. The cautery is of use in small tonsils, and where these are inaccessible to the tonsillotome. In tonsils subject to recurrent attacks of follicular tonsillitis, and which between the attacks do not exhibit a degree of hypertrophy sufficient for removal by excision, galvano-cautery operation is called for, and ensures probable immunity from subsequent attacks. The author injects five minims of a four per cent. solution of cocaine into the substance of the tonsil. One objection to the cautery is that the inflammation in the pillars is caused by radiated heat, and hæmorrhage sometimes is occasioned. After sufficient experience with both procedures—the galvano-cautery and one or other of the tonsil punches now in use by the majority of operators—a good punch is, perhaps, considered preferable. A punch with a ring-shaped cutting surface on one limb, and on the other a flat surface covered with some soft metal to receive the edge of its fellow, the whole strongly made, snips off the diseased tissue with ease, and rapidly demolishes even a large tonsil without pain or hæmorrhage. A spring to open the blades is necessary.

Gleitsmann refers to a case of calculus of the tonsil. This was situated in a part of the tonsil concealed by the anterior pillar. The calculus consisted of phosphates or carbonates of lime and leptothrix.

Sarcoma of the tonsil is several times referred to. Solis-Cohen succeeded in removing through the mouth a sarcoma the size of a hen's egg, and covered by a distended adherent soft palate. Cocaine was freely used over the parts. The soft palate was divided by the cautery knife so as to expose the growth vertically. It was found to be adherent to the periosteum of the palatine process of the superior maxillæ. Rapid recovery took place. Wagner removed a large tumour of the tonsil with the galvano-cautery loop with success.

An extensive literature is found directed towards diseases of the tongue, œsophagus, etc., throughout the numbers of the Journal. Nothing, however, demanding special attention in these remarks has been observed.

Wm. Robertson.

TONSILLITIS AND DIPHTHERIA.

DIPHTHERIA is a subject which has greatly engrossed the medical world during the past year.

The difficulties of diagnosis of obscure cases of diphtheria and

tonsillitis have long been recognized, and efforts have recently been made to render these difficulties less by bacteriological researches, which are becoming more frequently employed generally, both on the Continent and in England and America. In a paper read by Dr. Norris Wolfenden at the British Laryngological Association meeting in July, 1894, the author indicated the means of discriminating various forms of non-specific throat inflammations, such as (1) the streptococcal, (2) the staphylococcal, (3) the pneumococcal throat, &c., the recorded cases where these individual organisms have been found alone or predominant establishing certain differential clinical symptoms, which further careful study will probably extend. Mistakes in diagnosis will always be frequent until bacteriological examinations of suspected cases become general, and the best means of preventing the spread of diphtheria is to be found in establishing a system in this country similar to that already working in New York. A full account of this system is described in this Journal in a paper by Dr. Hermann Biggs (September, 1894), wherein is described the method of establishment and working of a central bacteriological laboratory under competent supervision, inspectors, and subsidiary stations throughout the city, where culture tubes, with full directions for their use, may be obtained readily by the practitioner. The latter is merely required to inoculate the tubes and return them to the central station, where a culture is made and the accurate diagnosis reported to the practitioner in charge of the case within twelve hours. When a case is once diagnosed as diphtheria subsequent cultures are carried out, even throughout the period of convalescence, and such a patient is not allowed to circulate amongst the community until there are no longer to be detected any Loeffler's bacilli in the throat secretions.

Following upon the aforesaid paper of Dr. Norris Wolfenden, the British Laryngological Association memorialized the Local Government Board to establish such a system in London. An important discussion upon diphtheria was held by the West London Medico-Chirurgical Society in November, 1894 (see report in this Journal of December, 1894), the outcome of which was a similar memorial, supporting by voice of the general practitioners the efforts of the specialists of the Association.

Meanwhile a start in this direction has been made by the Metropolitan Asylums Board of London, so far as the fever hospitals are concerned. But it requires to be carried out upon a much more extensive scale.

From May, 1893, to May, 1894, 5611 cases of suspected diphtheria were subjected to bacteriological examination in New York, and in 3255 cases the Loeffler bacilli were found to be present. About fifty-eight per cent. were thus proved to be true diphtheria. If in cases suspected to be true diphtheria there is thus found to be a margin of error in diagnosis of forty per cent., how much greater may this error be on the other side, in cases of obscure sore throat, not suspected of diphtheria. In Berlin, Paris, Switzerland, Boston, and New York it has been determined that from twenty to fifty per cent. of cases sent to diphtheria hospitals were not diphtheritic. The importance of such an error is manifest in view of the

facts that while streptococcal and staphylococcal sore throats are benign as to prognosis, the engrafting upon them of the diphtheria bacillus produces a most grave form of inflammation, almost invariably fatal.

The importance of regular bacteriological examinations during the period of convalescence is shown by the New York report, in that out of six hundred and five cases thus examined it was found that while the diphtheria bacillus disappeared within three days after the complete disappearance of the exudation in three hundred and one cases, it persisted in one hundred and seventy-six cases for seven days; in sixty-four cases for twelve days; in thirty-six cases for fifteen days; in twelve cases for three weeks; in four cases for four weeks; and in four cases for five weeks, after the exudation had to all appearances disappeared completely from the upper air-passages.

The report of Messrs. Park and Beebe (see JOURNAL OF LARYNGOLOGY, November, 1894) contains much that is of scientific interest as to the nature and properties of the diphtheritic bacilli.

Children, and adults to a less extent, brought into contact with diphtheria often receive the bacilli into their throats, which may persist and develop for days or weeks. In some of these no diphtheria developed, though it might be the origin of diphtheria in others. Of three hundred and thirty healthy throats in which no diphtheria contact was known, virulent bacilli were found in eight cases, and in twenty-four non-virulent diphtheria bacilli were discovered. In twenty-seven pseudo-diphtheritic bacilli occurred. Probably there are two kinds, if not more, of pseudo-diphtheritic bacilli.

As to the development of diphtheria, it was clearly shown that the crowded tenement districts of New York—which John Burns, M.P., has recently described as a disgrace to a civilized city—were the hotbeds of the disease.

At a meeting of the West London Medico-Chirurgical Society, Dr. Drewitt recently made some forcible remarks as to the importance of free ventilation where diphtheria occurs. In the absence of this it spreads in a remarkable degree, as was observed by Dr. Drewitt at the Great Ormond Street Hospital for Children.

Mr. Lennox Browne recently made a point of some importance. An examination into the frequency of cases of acute tonsillitis led him to the belief that it occurred with especial frequency after prolonged drought, followed by light rains which were insufficient to flush the sewers efficiently. It is undoubtedly true that emanations from sewers in London account for the origin of the disease in certain cases.

A very interesting paper was read by Dr. John Sendziak at the International Congress in Rome (see JOURNAL OF LARYNGOLOGY) upon the etiology of "follicular tonsillitis," based upon careful bacteriological examinations of twenty-two cases observed in Warsaw. In none of them was the Klebs bacillus found; in four occurred the pseudo-bacillus, along with staphylococci and streptococci; and in the remaining eighteen cases were found staphylococci alone in six, streptococci alone in two, and combined forms in ten. His conclusions are that lacunar tonsillitis is clinically and histologically an independent pathological process, having

nothing in common with true diphtheria. It is, no doubt, infectious, but we do not know its specific virus.

Many other observers have arrived at practically the same results.

Sokolowski and Dmoschowski are certainly in error in generalizing from the occurrence of fibrin in the crypts of an inflamed tonsil that lacunar tonsillitis is therefore diphtheritic. Mere histological examinations cannot justify such a conclusion. Fibrin is in itself no evidence of diphtheria, but only of the intensity of degree of injury of the mucous membrane.

Chaillu and Martin (*"Annales Inst. Pasteur,"* Vol. VIII.) have made bacteriological examination of one hundred and ninety-eight cases of suspected angina or laryngitis. In these they found twenty-nine cases of non-diphtheritic angina, non-fatal (coccus, pneumococcus, staphylococcus, and streptococcus); thirty cases of mild diphtheria, non-fatal; fourteen cases of severe diphtheria, with ten deaths; and twenty-six cases of diphtheria, in which there were other micro-organisms associated, and of which there were eighteen deaths.

Of ninety-nine cases of croup, seven were non-diphtheritic, with one death; seven others were non-diphtheritic at first, but became diphtheritic subsequently, with three deaths; and eighty-five were diphtheritic, with fifty-five deaths.

The latter observation bears strongly upon the question of the identity of "croup" of the larynx and diphtheria, and the New York report before referred to relates that of two hundred and eighty-six cases examined, in which the disease was confined to the larynx and bronchi, two hundred and twenty-nine were clearly proved to be diphtheria by the occurrence of the Loeffler bacillus. About eighty per cent. therefore of cases of acute laryngitis in children are proved to be diphtheria.

It is early yet to speak of the antitoxin treatment of diphtheria, and probably by the time the next retrospect of this Journal is due we shall be in a position to review the subject impartially. For the present we can only call attention to some results said to have been obtained on the Continent.

Ehrlich, Kossel, and Wassermann (*"Deut. Med. Woch.,"* No. 16, 1894), at the Institute for Infectious Diseases, have experimented as to the production of the serum, using for the purpose goats. With their preparation two hundred and twenty cases of diphtheria were treated by injecting goats' serum rendered immune. In one hundred and fifty-three of these cases no tracheotomy was necessary, and there were 76.4 cures. Of those children upon whom the treatment was commenced on the first day of the disease, all were cured; of sixty-six cases when treatment was commenced on the second day, there were 97 per cent. of cures; and of those treated for the first time on the fourth day, the percentage of cures fell to 56.5. The mortality of cases tracheotomized remained high, viz., 44.9 per cent.

At a meeting of the Berlin Medical Society, on June 27th, 1894, Dr. Katz communicated the experiences of the Emperor and Empress Frederick's Children's Hospital. From 1890 to 1893 the mortality from diphtheria had varied from thirty-two to fifty per cent. During the past

year Dr. Ahronson's antitoxin has been employed in one hundred and twenty-eight cases (up to June 20th). There were seventeen deaths, viz., 13·2 per cent.; of twenty-three cases where it was not employed there were eight deaths. Of all cases included, viz., one hundred and fifty-one, the total mortality was 16·5 per cent., thus contrasting forcibly with that of preceding years. The diagnosis was in every case authenticated by the detection of the Loeffler bacillus. As in the previously mentioned statistics, the percentage of fatal cases where tracheotomy or intubation became necessary was very high, viz., 54·6 per cent., but Katz remarks that in no case under injection treatment was extension of the disease from the pharynx to the larynx observed. These are probably the most favourable statistics yet recorded. As he had never seen any ill effects follow the injections, and as in many unpromising cases an unusually favourable course was pursued, he is convinced that the treatment merits extensive trial.

Moizard and Perregaux ("Bull. Medicale," December, 1894) record statistics of the treatment of diphtheria by antitoxin during October and November, in the Trousseau Hospital. Of three hundred and two cases of supposed diphtheria, fifty-three proved bacteriologically to be simple angina or laryngitis; eighteen children are unaccounted for. Of the remaining two hundred and thirty-one cases, there were only thirty-four deaths, equal to 14·71 per cent.

In 44 cases of purely diphtheritic angina there were	2 deaths
" 42 " " diphtheria with mixed forms (staphylococci, streptococci, etc.) there were	6 "
" 94 " " diphtheritic laryngitis there were	17 "
" 51 " " " " with mixed forms there were	9 "
In 30 cases tracheotomy was performed, with 12 deaths.	
" 18 " intubation " " " " " " " " " "	7 "
" 6 " tracheotomy was necessary after intubation.	

They state that injections of Roux's serum are without danger, but cutaneous urticarial or erythematous eruptions are frequent.

Roux and Martin give, in the "Annals of the Pasteur Institute," (September 25th, 1894) the details of their method of preparing antitoxin. What is clear in the statistics of the Trousseau Hospital is that there is a large margin of error, from simple observation of cases supposed to be diphtheritic, which can only be avoided by bacteriological diagnosis, and that mixed bacterial forms are more fatal than simple diphtheritic forms, and that the antitoxin treatment is still followed by a very high mortality percentage where tracheotomy has been necessary. We must also remember that the percentage of deaths from diphtheria is very high indeed in Continental hospitals as compared with that in England, and it would appear that much yet remains to be done in sanitation and hygiene abroad.

Yet, so far as statistics go, they are distinctly favourable to the antitoxin treatment, but it is necessary for the medical public to deprecate undue excitement, which has unfortunately been greatly fomented by the newspaper discussion of the antitoxin method. *R. Norris Wolfenden.*

LARYNX.

Probably the subject of laryngeal tuberculosis has received, during the past year, more attention than any other (*i.e.*, of subjects strictly laryngeal). Papers by Heryng (continuation and conclusion of previous articles), Gouguenheim and Capart deal with the question chiefly from the surgical point of view, bringing forward much evidence in support of curetting, arytenoidectomy etc.; on the other hand, Lennox Browne, whilst admitting the value of these operations in suitable cases, warns against too free use of surgical procedures. The wide differences in opinion as to the value of surgical, and, indeed, of many other forms of treatment of this disease, were clearly brought out in the discussion on tuberculosis at the International Congress in Rome. Lactic acid treatment probably maintains its position better than any other; strong solutions up to eighty per cent. are recommended, but care and skill are necessary in application, so that only the affected spots shall be touched. Injections of thiosinamin, so highly recommended by Hebra, have been tried by Sendziak in a series of cases, but with bad results. As for tracheotomy as a means of treatment—apart from cases of dyspnœa—opinions vary widely, some upholding it as of great value, others considering it useless, or worse. In Capart's opinion, "laryngectomy may be the operation of the future."

The vexed question of the process of invasion of the laryngeal tissues (in tuberculosis) has been again discussed, but nothing new brought out. Two cases (Woodward) seem to throw some doubt on the value of the presence of tubercle bacilli in the sputum as an aid to diagnosis in doubtful cases, for these cases, in spite of the presence of the bacilli, got well on antisyphilitic treatment.

Many cases of extirpation of the larynx—total or partial—have been recorded. Most of these were reported at comparatively short periods after the operation, varying from about six months to a few days, but one case operated on four years ago is still alive. Swain describes an operation by W. H. Carmalt, in which the whole larynx was removed with exception of part of the mucous membrane of arytenoids and ary-epiglottic folds, and part of epiglottis, and the epiglottis then sewed to the front of the œsophagus, so as to close in the pharyngeal cavity and cut off all communication with the wound in the neck. A curious fact to note, in connection with this and some other similar cases, was the recovery of a certain amount of power of speech. Piniaczek's paper on laryngo-fissure (see *Journal*, 1893) is continued in an appendix, recording the further history and results of twelve of his cases. Marsh reports one case operated on without preliminary tracheotomy.

Rousseau pleads for a more extended use of the galvano-cautery in the larynx. He considers its employment is indicated in sessile and small benign tumours of the larynx. The cautery point must be smaller than the growth, and must be applied near its centre. The degree of incandescence should in general not exceed a dull red. The duration of cauterization should be one second. The reactive phenomena are unimportant. The inequalities, which may be found after the drawing off

of the slough, generally disappear without further intervention. Transformation of a benign into a malignant tumour, under the influence of this cauterization, has never been seen by Dr. Rousseau.

In a discussion on singers' node, J. Wright reported a case in which there was also found consolidation of the apex of the right lung, and raised the question whether there was any connection between singers' node and tuberculosis. The general opinion expressed seemed to be that there is no such connection, but it was suggested that possibly in a tuberculous case a node might be more readily produced than in a healthy subject.

Further investigations into the condition of the nerves in tubercular arytenoiditis (see note by Dansac) show that there always exists a proliferation of the nervous terminations of the peripheral nervous filaments. The nerve proliferation is the more abundant as the tubercular process, with its characteristic lesions, is the more pronounced.

In a paper, based on the examination of thirty-eight polypi of the vocal cord, Prof. Chiari proves that the so-called fibroma of the cord is, as a rule, not a true fibroma, but a true polypus, *i.e.*, "a circumscribed hyperplasia of the mucous membrane together with the submucous connective tissue, in which all the elements of both these tissues take part." Two of the cases examined and described in great detail were specially instructive, as in them the sections were made of the polypus in continuity with the vocal cord; in the rest the polypus alone was obtained for microscopical examination. Their microscopic characters, their reactions to stains, together with their appearance, position, and whole clinical relations, lead the author to consider these growths polypi, and not fibromata. He does not deny that fibromata may occur, but considers that they must be rare. A detailed description of the minute anatomy of the ventricle of Morgagni is given by B. Fraenkel.

Moritz and Schlesinger have papers on laryngeal conditions in *tabes dorsalis*. Both classify the symptoms as follows: (1) Ataxy of the cords; (2) Spasmodic affections—laryngeal crises; (3) Motor paralyses. To these Moritz adds: (4) Paræsthesia, hyperæsthesia, and anæsthesia of the laryngeal mucous membrane, while Schlesinger adds (4) Vertigo laryngis. Some cases are reported in which *tabes* was diagnosed from the laryngeal symptoms alone.

In a case, shown by Butlin, of paralysis of the right vocal cord with nothing to account for it, was suggested (Semon) that the paralysis might be the forerunner of *tabes*. On the other hand, Dr. Ricardo Botey "holds it to be almost a clinical aphorism to consider as syphilitic "every paralysis of one or both abductors, when aneurism, œsophageal, "mediastinal tumours, etc., do not explain the median position of the "vocal cords."

Permewan has examined thirty-four cases of general paralysis of the insane, and arrives at the following conclusions:—

1. That the larynx is not unfrequently affected in general paralysis of the insane.
2. That this affects first and chiefly the abductors.
3. That this does not necessarily depend on the association of *tabes*

dorsalis with the more generalized disease, but is the direct result of the degenerative and inflammatory changes which affect the central nervous system in general paralysis.

From experiments on animals Emerich (Buda-Pest) concludes that the nervus accessorius is without influence upon laryngeal innervation. Sixteen experiments performed lately confirm his views, specially that the nervus accessorius is not a laryngeal nerve. According to Grabower also there is no connection between the accessorius and the motor functions of the larynx. In cases of paralysis of internal laryngeal muscles along with the sterno-mastoid, Grabower presumes a communication between the vagus and the nucleus of the accessorius.

Harris describes a case of stridor more marked during expiration than during inspiration, and in which the larynx appeared perfectly normal. The explanation was probably pressure of an aneurism on the trachea, as this had been found to be the cause in two other similar cases.

Chiari, in a paper read at the International Congress, classified and discussed the treatment of pachydermia laryngis. Omitting the verrucous form, which is identical with papilloma of laryngologists, he divides pachydermia into four groups. (1) Thickening and loosening of the epithelium of the inter-arytenoid membrane and vocal cords. (2) The typical form affecting chiefly the vocal processes. (3) Large genuine pachydermic growths in the inter-arytenoid fold. (4) Circumscribed thickenings, outgrowths or nodules accompanying tuberculosis, syphilis, chronic perichondritis, and perhaps lupus. Pachydermia is to be looked on as a symptom, not as in itself a disease. Damieno opposes Kleb's view with regard to the relationship of pachydermia to cancer, and holds that they are two quite distinct processes. In cases where the metamorphosis from pachydermia into cancer has been verified, he maintains that cancer has been present from the beginning under the superficial form of pachydermia.

Several cases of primary erysipelas of the larynx are recorded. With regard to three of these (reported by Lunin), Rauchfuss and Tilnig expressed the opinion that they ought rather to be called phlegmonous laryngitis, "as there is no reason to believe that they are true erysipelas." Fasano, however, in a paper read at the International Congress, maintained "that it is indisputable that there is such a thing "as primary laryngeal erysipelas, due to the streptococcus of Fehleisen " (as I found), and that this erysipelas has clinical features so marked as "to render it easy of diagnosis."

PHARYNX.

In this subject again the chief interest is in cases reported. An interesting malformation of the pharynx, consisting of a fleshy septum stretching from the uvula and soft palate to the lateral and posterior walls of the pharynx, was shown by Lennox Browne. A central opening existed large enough to admit a finger readily into the naso-pharynx, which was normal. Syphilis could be excluded, and the question therefore arose whether it was a congenital malformation, and, if so, how was it to be explained. These points were discussed at some length, but not

settled. Wagner reports a case of extensive burns from swallowing sulphuric acid, with cicatrices of very complicated nature resulting. In treating these, dilatation with lateral incisions gave the best results, neither electrolysis nor galvano-cautery proving satisfactory. Further support has been given to the treatment of tubercular ulcers, by curetting and lactic acid.

Amongst the more theoretical work done may be mentioned Magnan's study of the various forms of pharyngeal affections in tabes (giving reports of cases), and Engelhardt's investigations of the pharyngeal reflexes in normal and hysterical persons, in which, however, he arrives at no definite conclusions. Further, affections of the throat due to rheumatism are discussed by Nichols, and those due to gout by Solis-Cohen.

Arthur J. Hutchinson.

DISEASES OF THE TONGUE.

An important contribution to the surgery of the tongue is made by Butlin in a clinical lecture ("Brit. Med. Journ."), in which he gives his experiences of the removal of the whole or part of that organ in a series of forty-six cases, with only one fatal result. General sepsis and septic affections of the lungs are the complications to be specially guarded against. This is to be done by keeping the mouth wound aseptic, providing free egress for the discharge, and preventing discharge and food from entering the lungs. Price Brown removed a large epithelioma by means of the cautery knife, and claims to have secured much better results than could possibly have been obtained by any other method. During the operation there was practically no bleeding, and after healing the patient was left with a serviceable tongue.

The use of the cautery in tongue surgery is further illustrated by a case of Lauverer's, in which he removed a large angioma, "of the size of a fist," by means of elastic ligature, followed by cautery.

H. E. Durham reports three cases of persistent thyro-glossal duct, and gives an interesting classification of congenital cysts and fistulæ of the mid-line of the neck and base of the tongue.

Siegel has a paper on the bacteriology of "Mundseuche" and Soor, and recommending the use of salicylate and dithyo-salicylate of sodium in their treatment.

Hulke reports three cases of salivary calculi. He explains their greater frequency in connection with the submaxillary than with the parotid by the presence of mucin in the secretion of the former, and believes that in most cases a minute foreign body is present as the starting-point of a calculus. Morelli reports a calculus causing a swelling as large as a fist under the tongue.

A very curious case of difficulty of swallowing is reported by Naegeli. The tongue was firmly fixed, being practically nailed down by a sharp tooth.

With regard to physiology, reference may be made to a paper on "Movements of the Tongue" by Lange in "Langenbech's Archiv."

OTOLOGY.

IN this retrospect of the otological material which has appeared in the Journal for the past year, it will be evident that a very large proportion of it has been derived from the discussions which took place in the section of otology of the International Medical Congress at Rome. These discussions were reproduced with considerable completeness in our pages, and very frequent reference will be made to them in the present paper. For the sake of brevity the initials "R. C." will be used to indicate that the matter is taken from the report of the Roman Congress, and "J. of L." will signify the JOURNAL OF LARYNGOLOGY for 1894, the accompanying number specifying the page in the volume for that year. "B. M. A." and "Belg. Cong." indicate the British Medical Association meeting at Bristol, and the Congress of Belgian otologists and laryngologists at Antwerp respectively.

ANATOMICAL POINTS.—The *Criminal Ear* has been investigated by Daac ("Arch. of Otol.," October, 1893), who has followed up the subject so fully discussed by Gradenigo, but he has come to the conclusion that there is no characteristic type. Gellé ("Ann. des Mal. de l'Oreille," January, 1894) has brought out some points of clinical importance with regard to the bony casing of the facial nerve, its relation to the inner five millimètres of the posterior wall of the external meatus being the most significant.

PHYSIOLOGICAL POINTS.—Secchi (R. C., "J. of L.," 405) states that there is a positive pressure in the tympanum to the extent of four millimètres of mercury greater than that of the atmosphere, and that this is increased during the hearing of any sound; further, that the stapedius acts as a direct antagonist of the tensor tympani, and the vibrations are conveyed through the tympanic cavity directly to the fenestra rotunda, the chain of ossicles being only a subsidiary mechanism; that the lowering of pressure which takes place in the external meatus during deglutition is due to the fact of the lumen of the Eustachian tube opening before the pharyngeal orifice. Gellé ("Arch. Internat. de Laryng.," December, 1893) expressed the opinion, on the strength of experimental investigation, that the *movement of the stapes* in the fenestra ovalis was like that of a piston inwards and outwards, and not as hitherto supposed like that of a hinged shutter.

AURICLE.—*Diseases following Piercing of the Lobule* were treated of by Max Thorne ("Journ. of Am. Med. Assoc.," Jan. 27, 1894). Bidwell ("B. M. J.," Dec., 1893) described a case of *Rodent Ulcer*; Schleicher (Belg. Cong. "J. of L.," 846) one of pre-auricular *Epithelioma*, and Wilkin ("Brit. Med. Journ.," May 12, 1894) obtained temporarily beneficial results in a case of *Epithelioma of the Ear* by injections of pyoktanin.

TESTS FOR HEARING.—Dr. Levy described a *new Acoumeter*, the source of sound being water dripping on a metallic plate from a variable height (R. C., "J. of L.," 536). *Weber's Test* has been proved by Corradi (R. C., "J. of L.," 291) to be unaffected by any want of symmetry

in the bony cavities of the head. *Rinne's Test* was discussed by Dundas Grant (B. M. A., "J. of L.," 608) under the consideration of what he termed the *aëro-osseal difference*. He held that a positive though shortened result of Rinne's test was compatible with a slight degree of obstructive disease, and he insisted that in a case of unilateral nerve deafness Rinne's test on the deaf side might give an apparently negative result, which might be a serious source of fallacy.

EXTERNAL MEATUS.—*A case of External Cholesteatoma caused by a Bug* was described by Dr. Scholefield ("Lancet," Oct. 14, 1893). Courtade (Soc. de Lar. de Paris, "J. of L.," 158) related a case of *Hæmorrhage in the External Meatus following muscular effort*. He also recommended the use of *tubage or intubation* to prevent the re-formation of adhesions in the external ear ("An. des Mal.," Dec., 1893), and also to a more limited degree for the treatment of abscesses in the external meatus ("J. of L.," 378). *Artificial Diseases of the Ear*, common in countries where military service is obligatory, are described by Heiman ("An. des Mal.," Dec., 1893), and their methods of detection are indicated.

MIDDLE EAR.—*The Middle Ear in the Exanthemata* was treated very practically by Walker Downie (B. M. A., "J. of L.," 578). Lockhart Gibson (R. C., "J. of L.," 588) in a paper on *Middle Ear Disease and Adenoids* described various types of deafness arising from the presence of the latter, and including a form which answered very much to our idea of sclerotic catarrh of the middle ear, which we are accustomed to attribute to other than naso-pharyngeal causes. *The Nature of Sclerosis of the Middle Ear*, according to Eeman (Belg. Cong., "J. of L.," 822), is that of a bulbar lesion located between the nucleus of the auditory nerve and the roots of the trigeminus. *The Prognosis in Chronic Non-Suppurative Catarrh of the Middle Ear* was the subject of a discussion opened by Mr. Field (B. M. A., "J. of L.," 557) in which the speakers were generally agreed that it depended, as is now pretty well known, upon the relative improvement after inflation, and the condition of the Eustachian tubes and naso-pharynx. Dr. Dundas Grant added the fact that in young female subjects the prognosis was relatively very much worse than in those of the other sex, and suggested various reasons for it. His experience was corroborated by that of subsequent speakers. Dr. Milligan mentioned the injurious influence of catarrhs following imperfect drying of the head in girls, as probably one of the most potent factors in producing this result. Dr. Grant also referred to the relative anæsthesia of the membrane and inner surface of the tympanum in the sclerotic forms, advancing it as a further indication that the disease was of the nature of a tropho-neurosis. In connection with this may be noted the observation of Gradenigo with regard to the *Auricular Affections of Hereditary Syphilis* (*vide* "Internal Ear"). Many cases giving the clinical characters of sclerosis of the middle ear are ascribed by Politzer (R. C., "J. of L.," 286) to a *Primary Affection of the Labyrinthine Capsule*. With regard to the *Treatment of Sclerosis of the Middle Ear*, Broeckaert ("J. of L.," 822) and Dundas Grant (B. M. A., "J. of L.," 573) described the excellent results derived from the injection

of liquid vaseline or paroline, so strongly recommended by Delstanche and by Bronner. Seiss recommended this ("Ann. of Otol.," Jan., 1894), among other methods, for the treatment of *Tinnitus in Aural Sclerosis*. Knapp (B. M. A., "J. of L., 575") recommended the use of Lucae's spring probe, but expressed a strong opinion as to the uselessness of the vibrophone. Kirchner (R. C., "J. of L.," 281) recommended the use of an *apparatus for gymnastics of the drum and ossicles*, consisting of a tube fitting tightly into the ear, and reaching at the other end the patient's mouth, so that by alternately blowing and sucking he could perform massage and passive movement of the parts, similarly to what is effected by Delstanche's rarefacteur, the amount of force being regulated by the sensations of the patient (R. C., "J. of L.," 281). Bosio (R. C., "J. of L.," 414) recommended the treatment of *Chronic Catarrh of the Middle Ear by large openings*. Blake (R. C., "J. of L.," 366) insisted that intra-tympanic operations should not be carried out till after *exploratory tympanotomy*, followed by careful renewed testing of the hearing power.

Otitis Media in Children is, according to Dr. Rasch ("Hospitals Tidende," Nos. 18 and 20), often fatal, owing to the supervention of broncho-pneumonia. (Dodd, "Chicago Med. Rec.," February, 1894) has observed *Deviations of the Eye in Middle-Ear Suppuration*, which he attributes to exposure of the ampulla of the external semicircular canal, narrating a case similar to one published by Mr. Richard Lake ("Lancet," Sept., 1893). *The Extension of Epidermis into the Middle Ear* in cases of chronic suppuration of that cavity which, as is very well ascertained, is the step leading to the formation of *cholesteatoma*, was illustrated in the microscopical preparation from a case shown by Prof. Moos (R. C., "J. of L.," 288). Tansley ("Arch. of Pediatrics," February, 1894) described a case of *Acute Suppuration of the Middle Ear following the operation for Adenoids*, in which paracentesis was followed by recovery. The beneficial effects upon middle-ear suppuration occasionally seen after the occurrence of abscesses in the external meatus, was alluded to by Colladon (R. C., "J. of L.," 277); he looked upon it as an *abscess of fixation*, a form of counter-irritation which might be artificially induced by the introduction of an antiseptic irritant, such as thymol. Ludewig recommended some cutaneous injection of pure carbolic acid, not in the meatus, but under the skin in front of or behind it. Szenes related analogous favourable experiences, but the general opinion of the meeting was that the treatment was more risky than advisable. Cozzolino ("Ann. des Mal. de l'Oreille") speaks highly of the use of a ten to twenty-five per cent. solution of *chloride of sodium*, and of a three or four per cent. solution of *microcidine*, a compound of naphthol β and caustic soda. Isaia (R. C., "J. of L.," 410) recommended and gave formulæ for the use of *balsams in suppurative catarrh*. Szenes (R. C., "J. of L.," 288) gave his experiences of the use of *euphphen*, *alumnol*, *diaphtherin* and *antiseptin*, which in general were not favourable. Ferreri (R. C., "J. of L.," 399) made a strong plea for a trial of the *caustic treatment* before resorting to removal of the ossicles in cases of obstinate suppuration.

THE MASTOID PROCESS.—Cozzolino has given an analysis of *one hundred and twenty cases of Mastoiditis* (R. C., "J. of L.," 321) treated by him at Naples. A case of *Complete Necrosis of the Mastoid* is described by Kirchner (R. C., "J. of L.," 279). *Transillumination of the Mastoid Cells* is recommended by Caldwell ("Canada Lancet," July, 1893). He uses both the known methods, the lamp being placed on the mastoid and inspection carried out by means of a speculum through the meatus, or by directing the light by means of a suitable fenestrated india-rubber tube through the meatus while inspection of the mastoid region from outside is being made. The method does not seem to have been adopted very generally, if one may judge by the paucity of records concerning it. Reinhardt urged strongly the early *Removal of Cholesteatoma by Mastoid Operation* (R. C., "J. of L.," 273). He advised the retention of a permanent mastoid opening, and the borrowing of a flap of skin from the back of the auricle for the papering of the cavity. Blake (R. C., "J. of L.," 335) advocated the greater use of the *curette* in *Mastoid Operations* than is usually practised. By means of this instrument a great deal of the cutting and scraping is effected from within outwards, and is obviously a point of very great importance for safety. *Stacke's Operation* has been criticized by Schleicher (Belg. Con., "J. of L.," 845) in so far as he considers that Schwartze's original operation is often quite sufficient and involves less risk and less interference with anatomical structures. He adduces cases in support of his contention, and urges that the severer operation should not be resorted to so readily as is at present done.

THE DANGEROUS SEQUELÆ OF SUPPURATIVE DISEASE OF THE MIDDLE EAR.—Cases of *Lateral Sinus Phlebitis* have been recorded by Vickery ("Brit. Med. Journ.," Nov. 25, 1893), Bennett ("Lancet," Oct. 21, 1893), Barker ("Journ. of Ophth., Otol. and Laryngol.," Jan., 1894), Buck ("Med. Rec.," June 30, 1894), and Harris ("Lancet," Oct. 14, 1893), illustrating generally the typical features and the satisfactory result of treatment. Bennett notes a continuously high rather than an oscillating temperature. Ballance ("Brit. Med. Journ.," Dec. 9, 1893) narrates a case in which the symptoms occurred, but in which exploration revealed no thrombosis. Moos (R. C., "J. of L.," 261) gave a detailed account of a case of sinus phlebitis, revealed by examination after death from septicæmia, but in which the typical rigors and oscillations of temperature were absent. He advised bacteriological examination of the blood in cases of suspected septicæmia. Schiffers (Belg. Con., "J. of L.," 834) narrates a case in which temporary recovery took place, but in which death occurred later from sinus phlebitis and purulent meningitis.

Cases of *Cerebral Abscess* with subsequent recovery after operation are reported by Hutton ("Brit. Med. Journ.," Dec. 9, 1893), Bell ("Lancet," Oct. 28, 1893), and Burnett ("Ann. of Ophth. and Otol.," April, 1894). Moure (R. C., "J. of L.," 271) attributed a sudden death, in a patient with old-standing suppuration of the tympanum, to rupture of a cerebral abscess. Cozzolino (*Ibid*) ascribed the death of Schliemann, the explorer, to the same cause. Sainsbury and Roughton ("Lancet,"

Sept. 16, 1893) described a case in which it was decided to operate, but in which death took place before the operation could be carried out. Prof. Annandale gave his experience ("Brit. Med. Journ.," Feb. 17, 1894), and Dr. McBride methodized the exploration and treatment of the *Intra-cranial Complications of Ear Disease* ("Edin. Med. Journ.," April, 1894). A case of *Bezold's Mastoiditis* is narrated by Vulpus ("Arch. of Otol.," Oct., 1893). In a case of *Chronic Suppuration of the Middle Ear, with Aneurism of the Internal Carotid*, Marsh (Birm. Med. Rev.," Mar., 1894) ligatured the common carotid. The aneurism was due to disease of the vessel produced by extension from the ear.

INTRA-AURAL OPERATIONS.—*The Removal of the Malleus* is rendered comparatively easy by the use of an instrument invented by Delstanche ("J. of L.," Jan., 1894, 56). Beco has reported favourable experience of its use ("J. of L.," Dec., 1894, 818). Dr. Barr (B.M.A., "J. of L.," 623) recommends the excision of the malleus as a preliminary to the opening of the mastoid for obstinate suppuration. Dr. Milligan discussed the indications for excision of the ossicles in chronic suppuration of the middle ear (B.M.A., "J. of L.," Oct., 1894, 625). He considers it necessary where there is chronic purulent disease of the recessus epitympanicus with ossicular caries, or the presence of cholesteatomatous masses in the tympanic cavity, but when there is any considerable amount of caries of the osseous parietes he prefers Stacke's modified mastoid operation, preceded, however, by the minor operation of removal of the ossicles and membrane, this making it possible to explore the region more thoroughly. Sheppard ("Arch. of Oph. and Otol.," Oct., 1893) and Randal ("Therap. Gaz.," Feb., 1894) have also discussed the question, and Ludewig (R.C., "J. of L.," 328), after considerable experience, came to the conclusion that excision of the ossicles should be practised in chronic suppuration if this does not yield to treatment by liquid applications in a month. In the discussion Prof. Politzer limited the applicability of the operation to those cases in which the membrana tympani was almost entirely gone, or in which there were cholesteatomatous masses in the attic, or in which the hearing power was so reduced that any interference could not make it materially worse. *The Removal of the Incus* for tinnitus and vertigo is recommended by Burnett ("Med. News," April 28, 1894). *The Removal of the Stapes* has been further carried out by Jack ("Boston Med. and Surg. Journ.," Dec. 14, 1893) and Garnault (R.C., "J. of L.," 357). Blake has expressed his dissent from the advisability of the operation, at all events in the non-suppurative cases (R.C., "J. of L.," 336), and Bezold ("Arch. of Otol.," Oct., 1893) found that even in a chronic suppurative case hearing was made distinctly worse by the operation. Ferreri's insistence on the advisability of employing the *caustic treatment* before resorting to any of these operations has already been referred to.

INTERNAL EAR.—Helfich ("Journ. of Oph., Otol., and Laryn.," Jan., 1894) describes a typical case of *Traumatic Internal Otitis*, with meningitis due to a fall. Szenes (R.C. "J. of L.," 330) narrated *two cured cases of Total Deafness* in which there appeared to be an extreme degree of congestion

of the labyrinth. Rest, cold applications, without pilocarpin in the one, and with pilocarpin in the other, were the chief agents employed. *Syphilis of the Internal Ear* received attention from Poli (R. C., "J. of L.," 538), and Delsaux ("J. of L.," Jan., 1894, 53). Pilocarpin is recommended in recent cases. The *Auricular Affections of Hereditary Syphilis* were considered by Gradenigo (R. C., "J. of L.," 275). The typical pure abyrinthine form coming on about puberty, and preceded by interstitial carietitis, was of course recognized, but he held that there was another type with a clinical picture of chronic catarrh of the middle ear in addition to nerve deafness, occurring chiefly in females, and between the ages of twenty and thirty. [This observation should be associated with that of Dundas Grant's, in reference to the frequency and obstinacy of chronic catarrh of the middle ear in young females. *Vide* p. 40.]. Garzia recognized the *Influence of Malaria* in producing nerve deafness. He did not attribute it to quinine, and, on the contrary, held that this drug had a curative influence. The use of *Noisy Signals on Railways* is credited, according to Grazzi (R. C., "J. of L.," 291), with the production of much deafness in railway employes, and, along with Kirchner, Moos, and Szenes, he held that the hearing power of railway servants should be frequently tested by competent experts. Kirchner related a case of *Complete Necrosis of the Cochlea*, in which a considerable remnant of hearing was preserved (R. C., "J. of L.," 280). Prof. De Rossi alluded to the extreme difficulty of excluding the participation of the unaffected ear when testing the hearing of the diseased one in such cases.

THE PATHOLOGY OF AURAL VERTIGO was the subject of a paper by Prof. Gradenigo, who discriminated between true and spurious Ménière's disease, the latter depending upon affections of the middle ear. The subject has been fully discussed and illustrated by Dr. Stephen Mackenzie ("B. M. Journ.," May 5, 1894), who recognized the influence of middle-ear disease in very many cases. In those instances in which there is any evidence of arterial tension, he gives the practical recommendation that the patient should carry with him a small dose of calomel in a powder, to be taken at once on any threatening of an attack. Sir William Dalby (*Ibid.*, May 12, 1894) referred to the importance of constitutional treatment. Schleicher attributed to circumscribed labyrinthitis affecting the external semicircular canal, a disturbance in equilibrium coming on in a subject of chronic suppuration of the middle ear (Belg. Con., "J. of L.," 846).

INJURIES OF THE EAR.—Hotz witnessed a case of *mosquito bite of the membrana tympani* ("Ann. of Oph. and Otol.," Jan., 1894). Two interesting cases of *bullet wound* in the ear are narrated by Schiffers ("J. of L.," Jan., 1894, 52) and Ménière ("J. of L.," March, 1894). In the former there was an escape of cerebro-spinal fluid through the internal auditory meatus, and there was no fracture of the base [P.M.]. In the latter the labyrinth entirely escaped, but the facial nerve was shot through, and the bullet passed into the pharynx. Vulpius described a case of *Bilateral Fracture of the temporal bones* ("Arch. of Otol.," Oct., 1893), with nerve deafness on the one side, and rupture of the membrane

on the other. Starr described a case of *Traumatic Deafness* ("New York Med. Jour.," Jan. 20, 1894) *caused by a kick*. The hearing was restored after the first application of the Faradic current. It is questionable as to how far the loss of hearing was functional.

FOREIGN BODIES.—Schmiegelow ("Ugeskrift für Lager," No. 11, 1894, and "J. of L.," Dec., 1894) described a case of *Foreign Body in the Tympanum*, the removal of which, by means of separation of the auricle and chiselling, was followed by death from tetanus. Raoult ("Rev. Med. de l'Est," Feb. 1, 1894) found the *Larvæ of a Fly* in the ear in a case of chronic suppuration. Hennebert ("J. of L.," Jan., 1894, 54), removed a *Button in the Tympanum* by operation. Lautenbach ("Med. News," Jan. 27, 1894) revives the idea of a miniature double corkscrew for the removal of foreign bodies.

NEW INSTRUMENTS.—*Modified Aural Specula* have been devised by Lake ("Brit. Med. Journ.," Feb. 3, 1894), Wodon ("J. of L.," Dec., 1894, 838) and Dundas Grant (R. C., "J. of L.," 404). Lake's instrument is made of silvered glass and covered with vulcanite like a Ferguson's vaginal speculum; Wodon's is furnished with oval openings in its side, by which limited portions of the meatus can be exposed; Grant's has a considerable portion of the inferior wall removed, and a hinged lens, attached to the orifice, of which also the lower part has been removed. It is adapted for operating under inspection through the magnifying lens. *A Guard for preventing the too deep insertion of the Ear Syringe* has been devised by Lund ("B. M. J.," Feb. 23, 1894). *An Aural Furuncle Knife* for cutting from within outwards was exhibited by Dundas Grant (R. C., "J. of L.," 405). Delstanche describes a very ingenious *Incus Extractor* and an *Injector for the Attic* (Belg. Con., "J. of L.," 823). *An Aural Massage Instrument*, of the nature of a telephone receiver, is recommended by Bissel ("Journ. of Oph., Otol. and Laryngol.," Jan., 1894). A similar purpose is proposed to be achieved by means of a *Phonograph* by McFarlane ("Canada Lancet," May, 1892). For painful hearing, Scripture advises the use of home-made *Antiphones of Sealing-Wax* ("N. Y. Med. Journ.," April 7, 1894). *Salmon-coloured Cotton-Wool* has been ordered by Abbott ("Med. Rec.," June 23, 1894), for *Æsthetic Ear Plugs*.

CENTRAL NERVOUS DISEASE WITH AUDITORY SYMPTOMS.—Hughlings Jackson described a case of *Epilepsy with Word Deafness*, and spectral auditory hallucinations during the attack ("Lancet," Aug. 4, 1894). In a case of *Cerebellar Disease* Dercum ("Boston Med. and Surg. Journ.," Oct. 26, 1893) found deafness, probably due to pressure on the posterior corpora quadrigemina. *Symptoms of Brain Complication* occurring in a case of acute suppuration of the middle ear were removed by paracentesis and Wilde's incision by Bacon ("Ann. of Oph. and Otol.," Jan., 1894).

DEAF-MUTISM, LIP-READING, ETC.—A more careful clinical study of deaf-mutism is advocated by Love (B. M. A., "J. of L.," 614). Flatau (R. C., "J. of L.," 412) insisted on the necessity of special schools for the general, mental and physical training of deaf-mutes before arriving at

the age at which it is usual to take them into asylums for the deaf and dumb. A case of *Cure of acquired Deaf-Mutism* in a child three years of age, is narrated by Schleicher (Belg. Con., "J. of L.," 485). Boland (Belg. Con., "J. of L.," 837) advocated instruction in *Lip-reading for adults who have become deaf*. Stangenberg ("Hygeia," Mar., 1894, "J. of L.," 874) gives the result of an investigation of the hearing power, condition of the nose, etc., in school children.

MISCELLANEOUS.—In a paper on the *Reciprocal Interaction of the two Ears*, Urbantschitsch ("Arch. für Ohrenheil.," July, 1893) points out the injurious influence of a diseased ear upon a sound one, and the consequent necessity for energetic treatment of cases of unilateral ear disease. *Diplacusis* was, in two out of three cases under the care of Dahl ("J. of L.," July, 1894), due to acute catarrh of the middle ear, and in the third to labyrinthine disease. Cozzolino (R.C., "J. of L.," 325) described what he termed *Oto-Neurasthenia*, and a case of *Auditory Intermittent Paracusis* (R.C., "J. of L.," 415). Dundas Grant.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held on Wednesday Evening, October 24th, 1894.

Dr. D. BRYSON DELAVAN, *Chairman.*

SECTION OF LARYNGOLOGY AND RHINOLOGY.

OPENING ADDRESS BY THE CHAIRMAN.

Before beginning the scientific part of the programme, the Chairman, in a short address, welcomed back the members to the meetings of the section, and invoked their earnest co-operation during the coming season. He called attention to the fact that with this meeting the section of Laryngology and Rhinology had attained its majority: just twenty-one years ago the New York Laryngological Society, of which the section of Laryngology of the New York Academy of Medicine was practically a continuation, came into existence. It was organized in the autumn of 1873, by Drs. Clinton Wagner, Geo. M. Lefferts, Woolsey Johnson, Morris J. Asch, Francis P. Kinnicutt, Charles McBurney, Horatio Bridge, and Matthew D. Mann, and was the first society devoted exclusively to the study of laryngology and rhinology ever established, either in America or in Europe. The most memorable, as well as the final meeting of this society in its original form, was the one at which it was entertained by Dr. R. P. Lincoln, and a reception given to Sir Morell Mackenzie, who at that time was visiting the United States. This reception was attended by a notable gathering of distinguished specialists. Dr. Mackenzie read a paper on the now well-worn subject of hæmorrhage after tonsillotomy. Three years later (December, 1885) this section was organized, with Dr. Rufus P. Lincoln as the first President, and Dr. D. Bryson Delavan as Secretary.

In concluding his remarks, the Chairman stated that the present prosperity of the section was not the result of fortunate accident, nor of the influence of any particular institution, nor of the general popularity of this specialty; it was, rather, the legitimate outgrowth of the zeal and untiring efforts of the men who were leaders here twenty years ago, and who—or such as remain of them—continued to lead now.

While congratulating the society upon its present prosperity, it was well not to forget the promoters of its success. The aims of the society had been, first, to elevate, by its work and its example, the specialty of laryngology; secondly, to make a profitable and agreeable place of meeting for those interested in its work. That these aims had been successfully furthered in the past was evident from the rapid growth of the section and the great interest shown in its meetings.

The Chairman closed by referring with gratification to the fact that the City of New York had been the birthplace of Horace Green, the veritable father of laryngology, the location of the first laryngological society ever founded, and, finally, the home of one of the largest and most flourishing special societies of its kind in the world.

A Case of Sarcoma of the Palate successfully Treated by the Toxines of Erysipelas. By Dr. WALTER B. JOHNSON (Paterson, N.J.)

A male, aged sixteen, Irish, clerk. He was admitted to St. Joseph's Hospital, Paterson, on October 31st, 1893. Family history negative. The patient has always been delicate, although rarely ill. At seven he had measles, and two years before his admission an attack of pleurisy. Has always suffered from catarrhal trouble and hypertrophy of the tonsils, and in cold weather had frequent attacks of acute tonsillitis. Six weeks before entering the hospital he began to complain of soreness of the throat, and difficulty in deglutition. The voice sounds were thickened and there was slight dyspnœa, the respiratory function being almost entirely performed through the mouth. On examination it was found that a diseased area extended over the soft palate, the pillars of the fauces, and the regions of the tonsils; it also extended forward over the hard palate, and downwards, involving a portion of the pharyngeal wall, the base of the tongue and the upper part of the larynx, but not extending to the true vocal cords. The entire region was thoroughly infiltrated with sarcomatous deposits. The soft palate was increased to about three times its normal thickness. The new tissue consisted of cauliflower-like granulations, and some of the masses which made up the growth were undergoing a superficial ulceration, and discharging purulent secretion; others contained distended and tortuous vessels, which gave them a dusky hue, frequently observed in sarcoma. The uvula was apparently entirely destroyed by the ulceration. Several of the cervical glands were enlarged to a moderate extent. Since the onset of his throat trouble the patient had been steadily losing flesh and strength, and when he came under observation weighed eighty-six pounds. The dysphagia obliged him to take small quantities of liquid nourishment. The thickening of the soft palate prevented his breathing through the nose. A microscopical examination proved the growth to be a spindle-celled sarcoma.

The treatment adopted was the hypodermic injection of the *toxines of erysipelas*, in combination with the *toxines of the bacillus prodigiosus*. These were supplied by Dr. W. B. Coley, of New York. Some of the solutions were prepared by Dr. Alexander Lambert, of the College of Physicians and Surgeons, New York, and others by Mr. B. H. Buxton, of the Carnegie Laboratory. On October 21st, 1893, the injections were begun, fifteen minims being given every other day; this dose was gradually increased up to forty minims. The injections, which were usually made in the arm or leg, always produced redness, swelling and pain, which persisted for from twelve to thirty-six hours. The temperature after each injection varied from 99° to 103° F. After some of the injections the patient suffered from chills, nausea and vomiting. The treatment was continued from October 31st, 1893 to June, 1894, although it was intermitted a number of times during this period, for various reasons. The result of the treatment was a slow but steady improvement. Two weeks after the injections were begun the soreness left his throat and he was able to swallow fluid and solid food. This produced an improvement in his general condition, which has steadily continued. The glandular swellings gradually disappeared. In the throat cicatrization and contraction has taken place, and a white band of adhesions extends from the hard palate to all parts of the fauces. The uvula and a small portion of the epiglottis were destroyed by the ulceration. In June last the injections were discontinued, and since then there has been no return of the disease. The man is in excellent physical condition, and now weighs one hundred and seven pounds. He has no annoying symptoms of any kind.

Dr. WILLIAM B. COLEY said he had seen Dr. Johnson's patient before treatment was commenced. The condition was then so grave that he had supposed that little more than temporary relief would be gained by the injections of the *toxines of erysipelas*. He had hardly dared to hope that the outcome of the treatment would be so favourable. His own results with these injections in the treatment of malignant disease have been very encouraging. At the last meeting of the American Surgical Society, held in Washington last May, he reported thirty-seven cases of malignant disease (sarcoma and carcinoma) treated by this method, and gave five cases in detail in which he had good reason to hope for a permanent cure. Nearly six months had elapsed since then, and none had shown any signs of recurrence. One of them had now gone over five years, two for two years, and several others for one year. Since the publication of that paper he had treated ten additional cases of sarcoma, three of which had been extraordinarily successful. One of these was presented to the surgical section last March as an inoperable case of sarcoma. The disease involved the ileum, extending into the iliac fossa, and also involved a large part of the right side of the abdomen. After a few injections of the *toxines of erysipelas* the tumour began to break down and slough, and at the end of five weeks the treatment was discontinued. The result of the treatment was very distressing to the patient, and his condition for a time was extremely critical. He slowly recovered, however, and one week ago,

when Dr. Coley again presented him to the surgical section, there was no trace of the tumour left. The patient's weight increased from one hundred and fifteen pounds to one hundred and forty-four pounds, and he had been able to resume his work.

Dr. Coley narrated the histories of two other recent cases of sarcoma successfully treated by this method. He stated that, instead of employing the solutions of erysipelas and prodigiousus toxines separately, as he had done in his earlier cases, he now used a solution composed of a combination of the two.

He said that the great difficulty in producing erysipelas, the danger necessarily attending an attack of erysipelas, added to the fact that marked improvement followed repeated injections of bouillon cultures, convinced him that a certain portion, if not all, of the beneficial action was due to the toxic products secreted by the streptococcus rather than to the germ itself.

His first experiments with the toxic products were made in 1892, with bouillon cultures treated by heat (100° C.). The reaction following injections of this fluid was similar in character to that caused by living cultures, but somewhat less severe. The effect upon the tumours was also slightly less marked, the destructive effect of heat upon most bacterial products being well known. He very soon began using filtered cultures, prepared without having been subjected to heat. The cultures (obtained from a fatal case of erysipelas) were grown for three weeks at a temperature of 37° C., and then passed through a Kitasato filter. The filtrate thus obtained was put in glass-stoppered bottles, a small quantity of thymol crystals having been added, and kept in a cool dark place. The elaborate experiments of Roger upon rabbits, in Bouchard's laboratory, Paris, had proved that the bacillus prodigiousus has the power of intensifying the virulence of the erysipelas streptococcus. He, therefore, determined to try the effect of a combination of the toxines of the two germs upon sarcoma. The toxines of the bacillus prodigiousus were prepared in precisely the same manner as has already been described in the case of the erysipelas. The preparations were kept separate, and the doses of each ascertained by experiment.

The effect of the toxines of prodigiousus was not only to greatly intensify the reaction of the erysipelas, but careful experiment with toxines, singly and combined, in a large number of cases, has confirmed him in the belief that the antagonistic and curative action of the erysipelas is likewise greatly enhanced by the prodigiousus.

He believed the secret of the success in the cases reported had been largely due to, the combined action of the toxines of the two germs. Although the mutual action of these germs in intensifying the virulence of each other has been demonstrated by Roger in animals, it had occurred to no one, as far as Dr. Coley had been able to learn, to make use of this biological principle in the treatment of malignant tumours.

During the past year he had been experimenting with these toxines prepared in a number of different ways. The method already described, viz., growing the germs separately in bouillon, three to four weeks, and then filtering through porcelain, was adopted in the earlier cases. Later he had

tried a preparation made by growing the streptococci ten days in bouillon, then adding bacillus prodigiosus, which was allowed to remain two weeks longer. The bouillon was then filtered, and the filtrate thus prepared was exceedingly active, ten to fifteen minims being sufficient to give a temperature of 103° F. or 104° F. This preparation had, he thought, a better effect on the tumour than the former.

As the filter of necessity removes whatever of value lies in the bodies of the germs, he prepared cultures by heating them to 58° C. for one hour. This temperature is sufficient to kill the germs, and probably causes little chemical change in the toxalbumins. Cultures thus prepared were considerably stronger, and the effect on the tumour was apparently slightly greater than similar cultures filtered.

He had recently been using cultures prepared as follows: Bacillus prodigiosus is grown in streptococcus broth, to which a very little cacao has been added, for four weeks or more, and then the broth is heated one hour to 58° C. The fluid is then used without filtration. This is by far the strongest preparation he had been able to obtain. He had had a temperature of 105° F. follow an injection of five minims, and 104° F. three minims. Whether its effect upon the tumours is proportionately greater than the filtered preparation was uncertain. A trial of several weeks in a number of cases had inclined him to believe it to be the best preparation thus far used.

A very important point remained to be considered, and that was the character of the cultures used. Cultures obtained from any but a virulent case of erysipelas are of little value. All of his successful cases were treated with toxines made from cultures from a fatal case of erysipelas. Without going into the disputed question of the identity of the streptococcus of erysipelas and the streptococcus pyogenes, a large number of experiments with the living cultures of the streptococcus of erysipelas in the human subject had forced him to believe that the two germs are, for all practical and clinical purposes, distinct, although bacteriologically we might not be able to differentiate them.

Accepting for the moment the micro-parasitic origin of malignant tumours, an explanation of the action of erysipelas was not difficult. If a small quantity of blood-serum of an animal rendered immune to tetanus is capable of destroying or rendering inert the virulent bacilli in a fresh case, it is quite as easy to understand that the toxic products of erysipelas might bring about such changes in the blood-serum as to destroy the parasite of cancer. The parasite having been destroyed, the irritation would consequently cease, and this would lessen the hyperæmia of the parts, upon which factor the life of the tumour cells of low vitality largely depends. This theory, if it may be called such, seemed to Dr. Coley to offer the best explanation of all the facts observed. It explains the rapid degeneration, with breaking down of tumour tissue, as well as the slower disappearance by absorption. It also explains those interesting cases, several in number, where an erysipelas remote from the tumour has caused disappearance in precisely the same way as a local attack. These cases prove the phagocytosis theory alone insufficient to explain the action of erysipelas. It is worthy of note that the action of erysipelas

upon lupus and the secondary and tertiary lesions of syphilis is similar to that in malignant tumours, and this fact, joined to the fact that erysipelas has never been known to affect non-malignant tumours, is another point in favour of the parasitic origin of cancer.

In view of the results which he has shown it possible to obtain from the toxins of erysipelas and prodigiosus, which could be used with perfect safety and with scientific accuracy, he did not consider it advisable, except in extraordinary cases, to expose a patient to the risk attending an attack of erysipelas. He had known of six fatal cases from inoculation.

The results from an attack of erysipelas were little, if any, superior to those obtained from the toxins.

The cases which he had reported warranted the following conclusions :—

1. The curative action of erysipelas upon malignant tumours is an established fact.

2. This action is much more powerful in sarcoma than carcinoma.

3. This action is chiefly due to the soluble toxins of the erysipelas streptococcus, which may be isolated and used with safety and accuracy.

4. This action is greatly increased by the addition of the toxins of bacillus prodigiosus.

5. The toxins, to be of value, should come from virulent cultures and should be freshly prepared.

6. The results obtained from the use of the toxins are so nearly, if not quite, equal to those obtained from an attack of erysipelas that inoculation should rarely be resorted to.

The CHAIRMAN congratulated the reader of the paper upon the advance which his case signalized, and expressed the hope that this method of treatment, which could now no longer be regarded entirely as an experiment, since it had resulted in the cure of a fair proportion of cases of at least one form of malignant disease, might be pushed until its full value and importance has been incontestably established.

A Case of Sarcoma of the Epiglottis.

Dr. W. F. CHAPPELL reported this case and presented the patient. He also exhibited the specimen removed, and a drawing showing the location of the lesion. The patient was a female, aged thirty-two. Family history negative. The patient had always enjoyed good health until four years ago, when she had an attack of nervous prostration. About two and a half years later she began to experience difficulty in swallowing, and solid particles of food seemed to lodge near the root of the tongue. She came under observation on July 23rd, 1894. A laryngoscopic examination revealed a round, white tumour, about the size of a hen's egg, occupying the region at the base of the tongue and behind the epiglottis. It was freely movable and attached by a long pedicle. The white appearance of the growth, and the feeling of fluctuation suggested a large cyst; puncturing it, however, only resulted in the production of a severe hæmorrhage. The woman entered the hospital on July 25th, and on account of the embarrassed respiration under ether, a preliminary low

tracheotomy was performed. On August 3rd, under cocaine anæsthesia, the growth was removed with the hot wire snare. The hæmorrhage was trifling. Two days later the tracheotomy tube was removed, and the tracheal wound rapidly closed. The growth weighed three hundred and sixty grains and measured four and a half inches in its long diameter. Under the microscope the growth proved to be a sarcoma.

History of a Case of unusually large Tumour (Cancer?) removed by the Cold Snare from the Hyoid Fossa and Base of the Tongue. By Dr. S. SHERWELL (Brooklyn, New York).

The patient was a female, aged twenty-three, married, and resident in the United States. She was first seen on April 23rd, 1894, when she complained of a tumour in the throat, which interfered with her speech and deglutition, and caused her considerable discomfort, but no pain. During the past five months her symptoms had become aggravated. On examination the growth was found to extend backwards from the base of the tongue, and on the slightest movement of the pharyngeal muscles it touched the soft palate, almost entirely occluding the throat. On examining the throat with the finger the tumour seemed to spring from the raphé at the base of the tongue. It was irregularly rounded, and resembled a thick-walled cyst. On puncturing it with a needle a small quantity of yellowish fluid was withdrawn. Although there was no history of syphilis, the woman was put upon specific treatment for a time, but without benefit. On June 9th, under general anæsthesia, an attempt was made to remove the growth with the cold wire snare, No. 22 steel wire being employed. It was necessary to employ such strong traction, however, that the instrument broke. The wire was unthreaded from the instrument, and the loop allowed to remain attached to the growth for forty-eight hours, when the tissues had become so much softened that the tumour was easily removed with the écraseur. The patient left the hospital the second day after the operation. Up to the present time there have been no signs of recurrence. A microscopical examination of a section of the growth had been made before its removal, and it was reported to have the appearance of a typical alveolar carcinoma; this point, however, was not definitely settled.

The CHAIRMAN expressed particular interest in this case, as he had seen the patient before the operation. He considered it of the first importance in such cases to ascertain definitely the nature of the growth, whether malignant or otherwise, at the earliest possible date.

Dr. ROBERT C. MYLES presented a patient suffering from a malignant growth (*Epithelioma*), which involved the upper portion of the larynx. The patient claimed to have had this for over six years. Dr. Myles said he first saw it three years ago, when it had already attained a considerable size. The patient refused to submit to a surgical operation.

Dr. T. P. BERENS presented a patient with a *Hæmatoma of the Posterior Pillar*, following puncture of the right tonsil with the galvanocautery. The tumour was about the size of a large almond.

Dr. J. W. GLEITSMANN had seen a case in which the puncture of a

hypertrophied tonsil with the galvano-cautery had resulted quite seriously. The patient was a man who desired to have his tonsils excised, but this, on account of their red and angry appearance, the speaker refused to do. After a single puncture had been made into one of the tonsils with the galvano-cautery point a severe hæmorrhage occurred, which lasted several hours, and was finally controlled by torsion. Ligation was attempted, but the tissues were so soft that they gave way under the ligature.

Exhibition of Improved Instruments of Krause and Heryng for the Treatment of Laryngeal Tuberculosis. Presentation of a Patient thus treated, and Exhibition of Specimens of Tissue removed. By Dr. J. W. GLEITSMANN.

The speaker first exhibited a set of Heryng's old instruments, and then a complete set of Krause's new instruments, including two laryngeal double curettes, two cutting forceps, two forceps for the extraction of foreign bodies from the larynx, and Sajous' snare for the nose and larynx. He also showed a curette for the removal of the ventricular bands, and the new double rotary curette of Heryng. The chief advantage of this instrument is that it can be attached to a common stem and turned in different directions. He also showed two subglottic forceps of Scheinemann for the removal of tubercular growths or polypi. A glance at these various instruments, the speaker said, plainly showed the vast improvement that has been made within recent years in the manufacture of instruments for the treatment of laryngeal affections.

Dr. GLEITSMANN then presented a man, aged thirty-one, who came under his care for *Tuberculosis of the Larynx* in March, 1894. Two of his brothers had died of phthisis. He himself was well and strong until one year before the above date, when he began to cough and suffer from pain in the throat, and lost about twenty-five pounds. He had night sweats, and became short of breath. A physical examination revealed consolidation of the right apex; there was no cavity. A laryngoscopic examination showed infiltration of the right arytenoid region, and thickening of the right ventricular band, the latter being so large as to extend beyond the median line and completely conceal the right vocal band. Lactic acid applications were first made, followed by submucous injections of the same drug, but without effect. Since October 4th eight pieces of diseased tissue had been removed with the laryngeal curette. At the first sitting five pieces were removed, and the rest at two subsequent sittings, four and seven days later, respectively. After the second operation there was some pain in the throat, lasting several hours, and a slight rise in temperature. For the control of the hæmorrhage he employed the mixture advised by Heryng, consisting of equal parts of liquor ferri and an eighty per cent. solution of lactic acid. At present the ventricular band in this patient was of normal size, but its contour was slightly ragged, as the wound had not yet completely healed. The right vocal band was hyperæmic. There was no change in the arytenoid region. A microscopical examination of the pieces removed was made by Dr. Louis Heitzmann, who reported that they

consisted of tubercular deposits and contained large numbers of tubercle bacilli.

Dr. WILLIAM VULPIUS stated that he had seen this patient about four weeks ago, and the improvement that had occurred in the condition of the larynx was certainly very marked. It was a good case for operation on account of the circumscribed condition of the lesion. He has seen a number of these cases operated on at Krause's clinic in Berlin, where the ring-knife curette was employed, which left the surface very ragged. It was more a scraping process than an excision. The instrument employed in this case by Dr. Gleitsmann left a much smoother surface.

Dr. F. H. BOSWORTH stated that twenty years ago he was very enthusiastic about the cure of laryngeal phthisis, but larger experience had not proved the correctness of his early ideas. He had never employed the method of treatment described by Dr. Gleitsmann.

The CHAIRMAN expressed the opinion that the surgical treatment of laryngeal tuberculosis ought to be better understood in the United States. The work done in Berlin was certainly far in advance of anything they had any idea of. While it is true that only a few patients out of a large number treated have been cured, the temporary relief obtained by many of them has been most gratifying. If the distressing symptoms of these patients could be relieved even temporarily, it was well worth all the trouble and pain that this operation or series of operations might cause. Dr. T. Morris Murray, of Washington, D.C., had obtained excellent results with it. In conclusion, the speaker expressed the hope that the method of treatment might be studied more carefully and employed more extensively than it was.

Dr. GLEITSMANN then closed the discussion. He stated that while it was true that we cannot expect to save many patients by this method of treatment, if only one or two could be helped, who would otherwise surely succumb, it was well worth while. In other cases the relief obtained by the patient was worth undergoing the operation. To anyone experienced in this work the operation is not difficult—at least, not much more so than is the removal of a polypus from the larynx. As regards the stage of the disease at which the operation should be undertaken, Heryng states that it is contra-indicated when hectic is present. When, however, the ulcerations are so located as to give rise to severe dysphagia, he would curette even then.

In conclusion, the speaker referred to a case which he presented to the section in November, 1888. The patient was a woman, who was then suffering from extensive tubercular ulcerations of the epiglottis and tonsils, and was in a desperate condition. She was treated by means of the curette, applications of lactic acid and the galvano-cautery, and under these the lesions disappeared, and the woman is now entirely well.

Upon the close of the meeting, at the invitation of the Chairman, the members and their friends partook of a collation.

SIXTY-SIXTH CONGRESS OF GERMAN NATURALISTS
AND PHYSICIANS AT VIENNA.

LARYNGOLOGICAL SECTION.

"Monatsschrift für Ohrenheilkunde," October, 1894.

The Introducers were Profs. STOERK, CHIARI and KOSCHIER.

Prof. STOERK, as the Introducing President, greeted those present, and proposed as Presidents Dr. ONODI (Budapest), Dr. HEYMANN (Berlin), Dr. VICTOR LANGE (Copenhagen), Prof. PINIACZEK (Krakau), Dr. BRESGEN (Frankfort-on-Main), Prof. WAGNER (San Francisco), Prof. JUFFINGER (Innsbruck).

Dr. BRESGEN. *On the Use of Electrolysis in Deflections and Thickenings of the Nasal Septum, and Swelling of the Nasal Mucous Membrane.*

Dr. BRESGEN considered its scope limited to the following :—

1st. Those cases in which it was not possible to carry out more energetic treatment—for example, in delicate persons, or those who were suffering in other ways.

2nd. Cases in which radical treatment was refused. The use of electrolysis is of value in cartilaginous and bony outgrowths of the nasal septum, as also for swelling of the mucous membrane. Before all things it is necessary to carry out careful cocainization, and care should be taken to avoid causing distress by introducing the current quite slowly. Double needles are preferable to single ones, yet Dr. Bresgen uses the single ones in such a way that the one, for example, may be introduced straight into the anterior surface of an outgrowth of the septum, the other one bent, at an angle, being introduced into the posterior surface ; in that way a quicker and more thorough effect is produced. For the side walls of the nose he uses a double needle, which at two or four millimetres from the point has a rectangular bend, so that these needles can also be driven perpendicularly into the tissue. During the action of the electrical current there quickly forms a quantity of froth at the negative pole, through which a considerable amount of electrical force is lost. In order to prevent this it is necessary to blow away the froth into the back of the nose, or to introduce the needles in a new place. The after-pains, which may occur after the use of electrolysis, are generally so slight that the patients are not prevented from carrying on their usual mode of life. The slight hæmorrhages which occasionally take place at the positive pole are best stopped by means of a twenty to forty per cent. solution of chromic acid. Bresgen, on analyzing his experience, finds that electrolysis is not, nor ever can be, a therapeutical measure which can be used by other than experienced specialists, because when carried out by unskilled hands it can only lead to disaster.

The discussion was carried on by Drs. Hajek, Stoerk, Heymann, and Chiari, who all declared that electrolysis was a slow and not always painless method and was inferior to other means.

BRESGEN declared that he only used electrolysis when he could not or was not allowed to make use of other methods. He was always able to make electrolysis painless by the employment of cocaine in the way suitable to the case.

Dr. GROSSMAN. *On the Laryngeal Appearances accompanying Thoracic Aneurisms.*

Dr. GROSSMAN stated, on the grounds of his clinical experience and physiological considerations, paralysis of a vocal cord accompanied by an attack of suffocation passing away in a comparatively short time was a characteristic indication of an aneurism developing itself in the neighborhood of the inferior laryngeal nerve.

Dr. PINIACZEK remarked that the pressure which was exercised only upon one and that the left recurrent nerve was not likely to call forth a spasm of the glottis, to which a contraction of the muscles supplied by both recurrent nerves was necessary. He attributed the attacks to an increase in the already present narrowing of the trachea. The stenosis could be considerably increased with any rise of blood pressure in the aortic system, and in this way the attacks arise. In the same way the pressure acting upon the recurrent laryngeal nerve increased, on which account also the paralysis could take place, if already previously a paresis of the nerve was present.

Dr. MOHL had two cases, the one in a man, aged fifty, in whom in consequence of an attack of suffocation tracheotomy had to be performed. In spite of the introduction of the canula the stridor did not cease. A catheter was introduced, and this went through pendular movements, proving that the cause depended upon a forcing in of the whole of the tube. In this case with each fresh movement stridor came on, at the same time pressure upon the larynx (? inferior laryngeal nerve) of the left side was not the cause of the spasm.

In the second case laryngo-spasms occurred in a delicate child, aged six, in the course of an attack of pneumonia. In spite of his opposition tracheotomy was performed. The attack lasted ten minutes after the introduction of the tracheal tube, and recurred in the course of the next three days. This was a case of spasm of the bronchi.

Dr. HAJEK: The comparison between the irritation produced by an aneurism in the recurrences and that in the ganglion cells in tabes (laryngeal crisis) is not exact, as it is more probable that the laryngeal crisis is rather a paralytic than a spasmodic condition. Semon and Burger have called attention to the fact that the nocturnal occurrence of the crises is to be attributed rather to paralysis.

Dr. ONODI remarked that the reader of the paper had said nothing about Krause's views, and he looked upon the median fixation in the early stage of pressure of an aneurism as generally a spastic condition. Experimental researches have not made it possible to settle definitely the different acceptations of Krause's and Semon's doctrines. Semon's theory

is unquestionably proved for the trunk of the recurrent and for the muscle. It is a fact that the posticus dies sooner than the muscles of the separate glottis closers. It is further a fact that the isolated posticus nerve is the one which sooner loses its functional power. To these facts Dr. Onodi considers himself the first to bring forward a pathological anatomical proof in a case in which a double aneurism was present. The right recurrent was totally compressed, the left one in part. The investigations of the different nerves showed that on the right side all the nerves were degenerated, and on the left only the posticus and thyroarytenoid nerves. Dr. Onodi recommended that for the future the branches of the recurrent nerve should be isolated and separately investigated, and their results brought into accord with the symptoms observed during life. He did not agree with Grossman's views when he said that they are only to be looked upon as a spastic condition in certain cases, but that in most cases they are attributable to posticus paralysis.

Dr. GROSSMAN differed from Prof. Piniaczek, and stated that a one-sided irritation, or sudden paralysis of one vocal cord, could bring about severe dyspnoea. The opinion that the difficulty of breathing was brought about by an aneurism pressing upon the trachea itself was unsubstantial, because in such a case the suffocative attacks would be interspersed with periods of repose, but the stenotic murmur remained permanent. The breathing was never again quite free. The comparison with cases of croup in which the suffocative attacks occur also in sleep from the accumulation of mucus is also unsubstantiated, because here sleep is not a favouring element, but in aneurism rest would be the only mitigating influence operating against the production of the attack. Further, he was of opinion that it was not simply a paresis but a total paralysis which was present. He agreed that similar attacks may be brought about by other processes in which the inferior laryngeal nerve was compressed, but it was necessary always to think of aneurism where there was no other cause evident. He could not accept the phenomena described as supporting Krause's experimental observations, but he declined to enter into a discussion of this question on the present occasion.

Dr. ONODI (Budapest). *The Phonation Centres in the Brain.*

The existence of the cortical centre demonstrated by Krause has been confirmed by Onodi, as well as by Semon, Horsley and Masini. Masini's statement that the stimulation of the one centre with a weak current can bring about adduction of the vocal cord of the opposite side could not be confirmed by Onodi, who is therefore in accord with Semon. Extirpation of the one cortical centre brought about no change either in the voice or in the movements of the vocal cords. When both centres were extirpated the result was equally negative. After cutting through the corona radiata on both sides, as also after severance of the fibres between the cortical centre and the great ganglia, there occurred in the animal no change either in the formation of the voice or in the movements of the vocal cords. The transverse section of the medulla above the

vagus nucleus caused loss of voice. The glottis gaped; the vocal cords were unable to move inwards, and, on deep inspiration, they moved somewhat outwards. The same result occurred after isolated section of the corpora quadrigemina at their base. On both sides the region of the optic thalami was destroyed, the result being negative, as phonation was still perfect.

After these attempts, it occurred to Onodi to separate the corpora quadrigemina from the whole cerebral stem, and thereby to sever the connection between the region of the optic thalami and corpora quadrigemina. After these experiments the animal cried out and uttered loud sounds; the vocal cords moved inwards and outwards. Then Onodi separated the anterior quadrigemina from the posterior ones, and the voice remained perfect. The transverse section of the medulla above the vagus nucleus again gave the result already mentioned—that is to say, loss of phonation and adduction, and continuance of abduction of the vocal cords.

Onodi has therefore been able to localize a region whose preservation makes phonation and adduction still possible, and which lies with the posterior corpora quadrigemina at the uppermost part of the fourth ventricle for a length of eight millimètres. The upper limit of this region is the furrow separating the anterior from the posterior quadrigemina. The lower one is a plane drawn eight millimètres below and behind this furrow. When this region is left intact, phonation and adduction continue, and even when its connection with the brain and the basal ganglia has been severed; on the other hand, phonation and adduction cease when the downward connections of this patch are cut through. In the last case the abduction movements of the vocal cords depend upon the automatic function of the vagus nucleus. It still remains for further investigations to show in what relation the cortical centre and the one described by Onodi stand to one another and to the vagus nucleus. Further, in what order, and where the nerve fibres from this centre run until they reach the lower parts of the medulla oblongata. Onodi then demonstrated to the meeting the brain, with sections of the corpora quadrigemina of the medulla oblongata, &c., on which he had carried out his investigations.

Dr. RETHI (Vienna): The phonation centre acts in an analogous way with the centres for chewing and swallowing. These functions have also their associations with both hemispheres, and the writer was able to follow the fibres from the cortex downwards to the internal capsule and the subthalamic region. In this last region there lay the co-ordination centre for chewing and swallowing. If this is cut off, only simple contractions of the muscles of mastication, and without co-ordination, can be excited from the transverse section.

Dr. GROSSMAN called to mind that the experiments carried out by Dr. Onodi, in which he cut through the medulla oblongata at different heights, agreed in their order and results with his own analogous experiments.

Dr. ONODI recognized this circumstance as a known fact, which, in any case, is recognized in the fuller published report.

Dr. ONODI performed two experiments in the Physiological Institute during the sitting of the laryngological and physiological sections. In the first experiment he extirpated the recognized cortical centres on both sides. In the second he separated the thalamic region from the corpora quadrigemina. In both cases phonation remained undisturbed, and the *post-mortem* dissection showed the disturbances and sections of the parts described exactly as they were intended.

Dr. ONODI (Budapest). *The Relation of the Accessory Nerve to the Innervation of the Larynx.*

Out of a large number of experiments on dogs, in which the accessory nerve was torn out in the neck, there were no changes in the larynx as regards the known movements of the vocal cords. Further, in rabbits and dogs the accessory nerves were torn out from the inside of the skull through the foramen jugulare, and no changes took place in the movements of the cords. The after dissection showed that the extirpation of the accessory nerve had been complete. Section of the spinal part of the accessory nerve, as well as its electrical stimulation, gave likewise negative results. The most thorough experiments in different directions all came to the same result, namely, that the accessory nerves took no part in the innervation of the laryngeal muscles, and that the movements of the vocal cords were not influenced. These experimental results received support in most departments of the literature of the subject, as well as in the more recent investigations, which showed the unreliability of the opinion that the accessory nerve has any influence upon the muscles of swallowing and upon the heart, and further that clinical and pathologico-anatomical observations up to the present time have not cleared up the matter.

Dr. GROSSMAN was pleased to find that Dr. Onodi with his experiments had come to the same results as he had already done, but he thought the question as to whether the vagus or the accessory was the motor nerve of the larynx could only be incontrovertibly decided when it became possible to limit the vagus and accessory nucleus, or to classify the root bundles which come off from the side of the medulla oblongata.

Dr. RETHI (Vienna): Contradictions are sure to arise from the fact that all authors are not unanimous as to which nerve root fibres belong to the vagus and which to the accessory. A portion of the motor nerve runs in the lower fibres of the middle root bundle, and these must be looked upon as vagus fibres, because they originate in the same nucleus as the vagus, and leave the medulla oblongata united in one bundle with these. They lie next the accessory in the jugular foramen without anastomosing with it, and they again, in their further course, leave the accessory nerve. Regarded from this standpoint, Dr. Rethi excluded the accessory nerve from the motor innervation of the larynx, as well as, according to his experiments, from that of the pharynx.

Dr. ONODI remarked that, looking at the anatomical and physiological results obtained up to the present, he thought they must leave it to clinical and pathologico-anatomical investigation to settle this question.

Dr. EGMONT BAUMGARTEN (Budapest). *On Suppuration of the Ethmoidal Cells.*

From the consideration of a number of cases which were briefly communicated, the author distinguished the following forms of suppuration of the ethmoid cells as frequently observed :—

1st. Simple caries and necrosis of the ethmoid bone.

2nd. Cario-necrosis with the formation of suppurating cavities.

3rd. With formation of polypi.

4th. With an ossifying tendency: but all the forms might be looked upon as processes related to one another since disease of the ethmoid bone is common to all of them.

He then confined his attention to the primary simple form. In many cases the cause to be recognized was syphilis, and in several cases tuberculosis, typhus, scarlet fever, influenza, &c. There might be no subjective symptoms, but most frequently there was pain in the nasal bones or in the temple, less frequently pain in the eye, apathy, forgetfulness, parosmia, &c. Objectively the purulent discharge could be seen, and by means of the probe diseased bone could be felt. In many cases there was seen in the middle meatus a mucous swelling with a fissure or bag of pus, granulations, polypi, swelling and redness of the eye, or of the face. The prognosis in uncomplicated cases was favourable, if operated on early, but the risk of its extension was frequently unpreventable by any means. The treatment consisted in curetting and removing all diseased parts, and plugging with iodoform gauze. Care in the after treatment is most important.

Dr. HAJEK (Vienna) called attention to his paper upon diseases of the ethmoid bone, in which he expressed the great difference between his experience and that of others; in particular, he could not decide with regard to the diagnosis of caries, because in the nose it is very easy to be deceived as to what one feels by means of the probe, while very important decisions were come to with no other foundation than these explorations. Disease of the ethmoid bone is not nearly so frequent as is made out. In order to build up the study of ethmoid disease on a sound foundation, we must most thoroughly endeavour to bring clinical experience into accord with pathologico-anatomical investigations.

Dr. RETHI (Vienna) coincided with Dr. Hajek in his opinion that empyema of the ethmoid cells does not come before us very often; that the diagnosis is difficult, and that at the outset it is necessary to eliminate empyema of the antrum, and in regard to this Dr. Rethi mentioned a case of distension of the anterior extremity of the middle turbinated body which coexisted with a persistent suppuration in the nasal cavity, and after the opening of which there was no disease of the bone, but a polypus enclosed in the cell the size of a hazel nut. After removal of this polypus the suppuration ceased without any further treatment.

Dr. WEIL could not see when one saw profuse suppuration, and felt with the probe rough bone, about which there could be no mistake, why one should not make a diagnosis of necrosis with the same certainty as one does when the condition is found in the bones of one of the extremities, and naturally the place must not have been beforehand the

seat of operation. The distinction could only be made by means of pathological anatomy, when a patient with a clinical diagnosis of caries of the ethmoid happened to be afterwards the subject of a *post-mortem* examination. At the very least the extirpated portion of bone should be examined histologically, such as he failed to find in the account given by Grünwald, and also by Baumgarten. At all events, we are indebted to Woakes and to Grünwald that now we know how to classify these clinical pictures.

Prof. CHIARI stated that he had observed and treated a few cases similar to Grünwald's. He wished to draw attention to the fact that these cases were very rare, and that it was not every rough place that should be described as caries. It is very easy, even in a healthy nose, and with very little force, to feel a rough place by means of the probe, because the mucous membrane in certain spots is extremely delicate. Further, after the removal of polypi, one often feels rough bone, which certainly cannot be attributed to caries.

Dr. BAUMGARTEN still adhered to his opinion that disease of the bone is always present, but he again stated that it is often only after many examinations that the diagnosis can be definitely settled. Cases of polypus which have been operated on show disease of the bone below, but these cases have been left out of account.

Dr. THOST (Hamburg) discussed *The Conditions under which an Infection of the Larynx by Bacilli can take place.*

Hereditary and acquired tuberculosis have to be distinguished from one another, because, according to the latest investigations, bacilli may be conveyed from the parents. His remarks applied, then, to the similar conditions in the intestine, and evidence was brought forward that the moister climate of North Germany was not unfavourable for tuberculosis. He then demonstrated a case of solitary tubercle in the larynx which healed spontaneously—a case which, four years previously, had been treated with large doses of tuberculin and had cicatrized. At present there are numerous cases of acquired tuberculosis, due to injury, which similarly run a favourable course.

Dr. RETHI (Vienna). *Measurement of the Tension of the Vocal Cords.*

The tension of the vocal cords is measured by means of a scissors-like instrument, and through the tension of a pair of springs. The instrument presses the vocal cords at their middle part from within, and the glottis is widened to a definite extent. This pair of springs, like the branches of a pair of scissors, is introduced into the glottis of a curarized animal during stimulation of the different laryngeal muscles, and they are pressed asunder by means of a screw until an electrical contact shows that the intended degree of opening of the glottis has been reached. By reading off the graduation it can then be seen what degree of tension is present. Experiments are not yet completely finished, so that the results will not be published till later on.

Prof. STÖRK said he had experimented with a kind of manometer in order to ascertain the tension of the larynx as a whole. He was

particularly interested in these measurements in practised singers. Measurements were carried on with simultaneous reference to the girth of the chest, the stature, and the respiratory capacity as taken with Hutchinson's spirometer, but all these figures gave no positive result, so that Prof. Stoerk had given up this mode of measurement of tension. At the same time, he considered Dr. Rethi's instrument as an extremely good one, and likely, later on, to lead to exact knowledge of the relations of tension of the laryngeal muscles in the human subject.

Dr. REINHARD (Duisburg). *A Case of Primary Epithelial Carcinoma of the Maxillary Sinus, with a Demonstration of the Preparation.*

He demonstrated the preparation which had been taken six weeks before from a patient, aged sixty-five, by total resection of the left superior maxillary bone.

Dr. PAUL HEYMANN (Berlin). *On Adhesions and Narrowings in the Pharynx and Larynx resulting from Lues.*

Heymann distinguished three places in the pharynx where such adhesions take place, close behind the choanæ, at the transition from the naso-pharynx to the auro-pharynx, and close above the epiglottis in the lower part of the pharynx. The adhesions, which are the ultimate result of gummatous ulcers, are almost always circular. In the larynx we have usually to deal with membranous adhesions of the true and false vocal cords; still there are occasionally adhesions at other places, such as oblique adhesions and distortion of the cartilage, etc. It is often impossible to arrest the ulcerative process, and it only remains to wait for complete cicatrization, and then to start surgical treatment of the stenosis, in which continuous dilatation has proved itself to be the most valuable in the majority of cases. It is important to notice the relatively frequent recurrence of such adhesions in the hereditary form of syphilis.

Prof. PINIACZEK once removed the epiglottis as this was drawn backwards and downwards by means of cicatrization, and thereby gave rise to stenosis of the larynx. Excision of the cicatrix frequently caused severe bleeding.

Dr. THOST asked whether in the cases of so-called hereditary syphilis the heredity was demonstrated with certainty.

Dr. HEYMANN remarked, with regard to Dr. Thost's question, that naturally he had taken great care in his cases of hereditary syphilis to seek for other signs of this disease, and in almost all his observations he had found them. With regard to Prof. Piniaczek's remarks, he stated that in the cases where a simple disruption of the cicatricial cord gave promise of a good result, he did nothing beyond that.

Prof. PINIACZEK. *Contribution to the Treatment of Stenosis of Trachea after Tracheotomy.*

He described the narrowings which take place in the trachea in those who have been tracheotomized, or those on account of which tracheotomy had had to be performed. First he mentioned the spontaneous hyperplasia of the tracheal mucous membrane, which may cause stenosis of

the tube with or without narrowing of the larynx. He then referred to the stenosis which may result from irritation of the mucous membrane by the lower end of the canula, where granulations or swelling of the mucous membrane may give rise to the stricture. He examines the windpipe through the tracheal fistula under the control of vision, and treats it in the same manner. He then came to the removal of granulations, the shelling out of growths and systematic dilatation. For the latter he used pieces of oesophageal or urethral catheters, cut short according to the age of the patient. Briefly he mentioned also new growths, inflammatory complications, etc., as possible causes of stenosis, and demonstrated foreign bodies removed by him from the bronchi—for example, a bullet, two canulæ, a piece of cork and a bent pin.

Dr. THOST mentioned a case where, in spite of careful treatment of the mucous membrane of the trachea which had undergone polypous changes, the removal of the canula was impossible, because on account of the inflammatory process the delicate tracheal rings, similar to what occur in goitre, had become softened, and the trachea lay together like a flaccid sack. Thost then used the glass canula, devised by Mikulicz, described in Gottstein's text-book, and later also similar canulæ made of gum elastic. The child breathed very well with this, but as soon as it was removed dyspnœa came on. It was necessary to continue the use of the canula because the trachea always collapsed.

Prof. STÖERK described the difficulties which often present themselves in attempts at "decanulement" in little children, and he wished to know if Piniaczek's method gave good and quick results in such cases.

Prof. PINIACZEK replied that his remarks did not refer to the difficulties of decanulation, but to tracheal stenosis in those who had been tracheotomized. He would be content if the difficulties of decanulation depended only on those changes which were caused by the extremity of the canula. As regards the softening of the trachea, he recognized it, and had seen it in little children by means of his own speculum. The posterior wall pressed against the anterior one till they came in contact, a condition which was most pronounced during forced expiration, cough, and similar efforts. The child breathed quite easily through a closed canula, but after its removal the suffocative effects came on, especially during the cough, or when the fistula came together, or the attacks came on during sleep.

Dr. THOST mentioned that he, as he had already demonstrated at Halle, had treated a series of cases of cicatricial stenosis forming over the canula by means of solid tin plugs, which were introduced through the fistula, and brought about healing by this mechanical mode of dilatation in children who had been operated on without result. Thost considered it of importance that the dilating instruments should be heavy, and were best made of tin, because tubes and gum elastic bougies were ineffective.

Dr. ONODI. *On the Phonation Centre.*

Dr. ONODI brought forward an experiment which he had, in the present sitting of the physiological section, carried out under the presidency

of Prof. Grützner. In the animal operated on the region of the optic thalamus was separated from the corpus quadrigeminum by a direct cut, and phonation remained undisturbed. On dissection the section was found, and Dr. Onodi demonstrated the conditions in the brain.

Dr. GOTTFRIED SCHEFF. *Contribution to the Physiology and Anatomy of the Human Nose.*

What is the direction of the air-current in the nose? After a retrospect of the literature referring to the subject, Scheff communicated the results which he had arrived at from his own experiments.

His experiments divide themselves into two groups.

First group: Those experiments, carried out upon dead bodies, which led to the result that the greater part of the current finds its way through the middle meatus. The old division into a respiratory and an olfactory region, therefore, appears to be physiologically incorrect. Further, that even in ordinary respiration perception of smell takes place, and that the function of the accessory cavities, according to which these ought in a mechanical way to favour the act of smell as Braune and Clasen think, appears not to be supported by experimental research. Finally, that only the act of sneezing can have any action upon the contents of the accessory cavities.

Second group: A new method of representing the build of the inner nose by casts.

According to this, it appears very strikingly as a fundamental fact that there is only one wide and unobstructed passage for the current of air and that this is the middle meatus.

Dr. ROTH remarked that most patients who have obstruction in the middle meatus do not in reality complain of diminished permeability of the nose, but, on the other hand, they do when the obstruction is in the inferior meatus. He distinguishes an active and an automatic respiration, and thinks that it is only in active respiration that the larger part of the air-current passes through the middle meatus.

Dr. KAYSER (Breslau): I am pleased to be able to confirm that the results of Dr. Scheff's experiments agree with those which I carried out some years ago. I have also, however, been able to represent these relations on the living subject according to my method, and on this account, that I had air inspired which was saturated with magnesia powder. This takes away the force of Dr. Roth's argument that the direction of the air-current proved by experiment only takes place in forced respiration.

Dr. HAJEK: Dr. Scheff is not the first who has investigated the anatomical relationships of the nose by means of casts of the nasal cavities and of their accessory spaces. Siebenmann, in Basel, made wax casts several years ago and demonstrated them.

Dr. ROTH replied that he had only pathological cases in view, and that there would be no reason for doubting the evidences of experiment.

Dr. SCHEFF, in conclusion, declared that Dr. Kayser had saved him the trouble of any further reply, and he would add nothing to what he had stated.

Dr. ARTHUR HARTMANN (Berlin) demonstrated—

1. A series of frontal sections through the nose of the fox.
2. Photographic wall pictures of preparations in his collection.
 - (a) Divisions of the nasal septum.
 - (b) Anatomical relations of the frontal sinus and the naso-frontal duct.
 - (c) Anomalies of the antrum of Highmore.
3. Instruments.
 - (a) Double ring forceps.
 - (b) Scissors for the removal of the inferior turbinated body. As indications for the use of this he cited stenosis and the call for the establishment of a free passage for the destruction of tumours of the naso-pharynx.
 - (c) Loop for attaching electrolytic needles to the patient.

Prof. CHIARI. *On Lympho-Sarcoma of the Pharynx.*

Prof. CHIARI gave a short description of this rare malady, founded upon researches into the literature of the subject and his observation of two of his own cases, watched for several months up to the time of death. This begins with the formation of a large tumour, preferably in the tonsils, or of a group of agminated small infiltrations in the walls of the pharynx. Soon there occurs a breaking down either on the surface or in the deeper parts. The ulcers thus formed are often mistaken for diphtheria, or, still more, for syphilis. They heal, as a rule, even if only in parts, but soon there come new infiltrations; these persist or break down into pus or slough, or even disappear (often in a few days) without any inflammatory appearance.

These processes often repeat themselves for several months at different parts of the pharynx. As a rule the lymphatic glands of the region are soon affected. Finally there occurs the formation of large tumours in the pharynx, mouth, and upper jaw, and extension of the process to the orbits, the cranial cavity, and the larynx. Suppurations, sloughings, difficulty in swallowing and respiration, and frequently cerebral disturbances lead up finally to death, after sufferings lasting for many months, or even more than a year. The diagnosis is easy after prolonged observation of the above-mentioned points. The most characteristic feature is transition from new formation to ulceration and resorption. In the commencing stages it may easily be mistaken for syphilis.

Prof. Chiari then described the differential diagnosis from syphilis, lupus, tuberculosis, carcinoma, and sarcoma, for which the histological investigation is often of the utmost importance, especially at the commencement. In the way of treatment he recommended arsenic and palliative surgical procedure.

Prof. STOERK. *On Lympho-Sarcoma of the Pharynx and Larynx.*

Prof. STOERK showed that by means of new methods of investigation, our knowledge of a large series of diseases, which we and all other practitioners even up till very recently had diagnosed inaccurately, had been

cleared up by means of more minute anatomical and microscopical investigations. By the recognition of the bacillus of rhinoscleroma this large group had been separated from hereditary syphilis, or to speak more exactly, had been diagnosed as rhinoscleroma. The same thing had taken place with the often indefinite diagnosis of scrofula. We scarcely dared to recognize the fact that strong, healthy men who had never previously been ill got swelling and suppuration of the glands, and were classified and treated as scrofulous, until at last it was found that during the ingestion of various kinds of food, the fungus (*actinomyces*) had poisoned the individual, or more exactly had caused an outbreak in the glands of the lower jaw. In this list of diseases that are not correctly diagnosed during life we must place lympho-sarcoma. Up to the present all cases of lympho-sarcoma have only been recognized on *post-mortem* examination, or during life only by the excision of an ulcerated tumour, or of a portion of it, and then only by means of microscopical examination. The collection of preparations of lympho-sarcoma, and their clear and exact description by Prof. Kundrat has made it possible for Prof. Stoerk to recognize this disease in life even at its initial stage. The two cases which Prof. Stoerk described in a reprint from the "Wiener Medicinische Wochenschrift," given away at the Sixty-sixth Congress of Naturalists, are there set forth in sufficient detail.

Dr. GROSSMAN said that, in consideration of the circumstance that he himself, two years ago, saw three cases in a few months, including Albert's case described by Chiari, he believed that lympho-sarcoma came under observation with some degree of frequency in the mouth, nose, and pharynx. He and others had noticed a considerable resemblance between actinomycosis and lympho-sarcoma. As a factor for differential diagnosis between syphilis and lympho-sarcoma, he would place the early and total paralysis of the soft palate which appeared in the latter.

Dr. HAJEK considered the papers of Profs. Chiari and Stoerk as of very great importance in regard to the recognition of this form of disease, which up to the present had been so seldom observed. The demonstration of one of Prof. Stoerk's cases reminded him that he had had under treatment for a considerable time a similar case with translucent infiltration of the back wall of the pharynx, of the epiglottis, and of the ary-epiglottic folds, the significance of which he had not yet been able to make out. He had never seen anything similar.

Dr. FRANZ SPITZER communicated the history of a case of sarcoma of the naso-pharynx, which he had watched from the beginning of disease up till death.

Prof. PINIACZEK remarked that lympho-sarcoma of the tonsils appeared to have been less frequent formerly than at present. In the year 1874 there was only one case of Billroth's known in literature. Since that time he had himself seen four cases, in three of which lateral pharyngotomy had been carried out. Beyond this he mentioned three other cases which, perhaps, ought to be recorded as cases of lympho-sarcoma, but in which microscopical examination was not made, and no autopsy was obtained.

Dr. RETHI (Vienna) had had a case in which the masses of the tumour

were situated chiefly on the roof of the pharynx, and in which he had removed them by surgical measures without lasting results, in which also he had given iodide of potassium and arsenic without result, but in which the injection of a five per cent. solution of pyoktanin had led to a rapid disappearance of the growth. Death took place with meningitic symptoms, but still, in view of the limited choice of remedies, experiments in this direction were to be recommended.

Prof. JUFFINGER mentioned that in a case which he had had an opportunity of observing from the beginning the first symptom was frequent though slight hæmorrhage from the nose and mouth, and he recommended that this symptom should be kept well in view.

Dr. THOST remarked that similar cases, but in which there were malignant tumours of the tonsils with numerous and serious metastases, were not so very infrequent.

Prof. CHIARI dwelt upon the importance of distinguishing lympho-sarcoma from lymphoma, leukæmia, pseudo-leukæmia, etc., as was done so clearly by Kundrat.

Dr. M. HAJEK (Vienna). *On Atrophy and Pseudo-Atrophy of the Nasal Mucous Membrane.*

Different opinions are held with regard to the relation of diseases of the accessory cavities to the changes in the nasal mucous membrane. Some authors adhere to the opinion that in ozæna there are frequently present diseases of these accessory cells; others, including the speaker, think that the opposite of this is correct.

In the opinion of Dr. Hajek the contradictory views depend upon the fact that there are conditions in the nose simulating atrophy, but which are not in reality such. Another reason is that certain authors attribute every considerable secretion from the nasal mucous membrane exclusively to a disease of the accessory cavities without having brought forward proof such as to shut out all doubt. In particular, there is one form of clinical picture which may very easily give rise to the idea that there is only concerned in the case a pseudo-atrophic condition, and in parts also hypertrophy. The fact is that in cases of typical atrophy, where there is no hypertrophy in the middle meatus and on the middle turbinated body, it is very rare for there to exist a disease of the accessory cavities. When sometimes in these later cases masses of pus are seen in the middle meatus, and in other parts of the olfactory fissure, thick mucus may be found on careful examination to be secreted only by limited portions of the mucous membrane—a fact which is not very astonishing when we consider how rich the nasal mucous membrane is in mucous glands. If we exclude the numerous cases of pseudo-atrophy which do not lead to typical ozæna, and if we rigorously assume the hypothesis of disease of the accessory sinuses, especially of the ethmoid and sphenoid, then the clinical observations agree pretty well with anatomical results, which show that in ozæna it is only an exceptional thing for the accessory cavities to be affected.

Dr. BAUMGARTEN distinguished a classical picture of atrophic rhinitis with ozæna from the more frequent obvious cases of rhinitis atrophica

which presents itself in childhood with disease of accessory cavities, etc., and which are of a curable nature as in contrast with the former.

Dr. BRESGEN (Frankfort) would no longer look upon atrophy as a definite indication, because in the living subject this sign could only be determined in an indefinite way, and in most cases there was no complete atrophy; so that by means of treatment an improvement could be stated to have taken place in the so-called atrophy. A close adhesion of the mucous membrane to the bones was not sufficient to justify a diagnosis of atrophy. The mucous membrane should over and above this be felt to be much thinned. Further, one ought not to speak of suppuration from one accessory cavity, or from the nasal cavities, but of localized suppuration, or superficial suppuration of the nose; since localized suppuration in the middle meatus cannot be described as suppuration of the nose while at the same time no nasal cavity is diseased, there is therefore to be recognized a local suppuration which has as its contrary superficial suppuration. The diagnosis of suppuration of an accessory cavity ought not to be grounded upon the results of syringing out. To be certain there should, after thorough cleansing of the naso-pharynx, be then so much more pus washed out that this without the slightest doubt cannot be attributed to the nasal or pharyngeal mucous membrane.

Dr. HAJEK insisted that the diagnosis of disease of an accessory cavity could only be made certain when, after thorough cleansing of the nasal mucous membrane, masses of pus could be found in the liquid syringed into an accessory cavity by means of a canula introduced into it. From an accumulation of a few flakes of mucus he never considered himself justified in diagnosing a general affection of the accessory cavities.

Dr. PANZER (Vienna). *On Tuberculous Polypi of the Vocal Cords.*

Among tubercular growths in the larynx those of the vocal cords are the least frequently observed. In these situations we generally find infiltrations, which soon break down. Two kinds of tumours, like tuberculous growths in the vocal cords, are described—papillary outgrowths and polypoid strictures. In literature eight cases of this kind have been described. To these we have to add three more from the private and hospital practice of Prof. Chiari.

In the first there was a fibroma of the vocal cord, which, more than four years ago, was operated on, but, four months after the operation, a recurrence took place in the shape of a polypus, which on investigation proved itself to be tuberculous. Since then the patient has remained in health.

In the second case there were papillary excrescences on the left vocal cord, which only on histological examination turned out to be tuberculous.

In the third case there was again what appeared to be ordinary polypus of the vocal cord, but the microscope revealed the fact that it consisted of tuberculous granulation tissue. The supervention of circumscribed tuberculosis in the first case may be in relation to local infection of the wound. The cases of tuberculous polypi would be much more numerous if polypi, when removed, were examined micro-

scopically. The treatment should consist in removal of the tumours and cauterization of the wound.

Dr. THOST thought that these cases did not prove that the larynx was primarily and the lungs secondarily affected, as no inoculation was made and no testing injections with tuberculin or tuberculoicin were carried out.

Dr. RONSBURGER asked if the patient's sputum had been examined.

Dr. PANZER replied that there was no expectoration.

Dr. ARONSOHN (Ems-Nizza) thought that he had seen two cases of primary tuberculosis of the larynx. In the first no abnormality could be detected in the lungs, but there were typical tuberculous ulcerations in the larynx. Two years later he came under another specialist who found nothing pathological in the lungs, and took the affection in the larynx, which had already made very considerable strides, as syphilitic (although the patient gave every assurance that he had never had syphilis), and treated him with a course of mercury. A few weeks later the patient died of tuberculosis of the larynx.

The second case was several times examined by Schrel, several times also by other well-known physicians and specialists, in Odessa, Kiew, Paris, and by none was any palpable abnormality found in the lungs. Relations, including a sister of the patient, had died of tuberculosis. On account of the absence of lung disease Schroetter did not consider the throat affection as tuberculous, but all the other specialists, and particularly those who saw him in Paris, including the chief of the surgical clinic, who performed tracheotomy on account of the dyspnoea, looked upon the disease as being tuberculosis. I agreed with this diagnosis when I saw the patient half a year later.

Dr. KOSCHIER (Vienna) mentioned a case of apparently primary tuberculosis of the larynx, in which, on *post-mortem* examination, old tuberculous cicatrices were found. At the same time he mentioned three similar cases of tuberculous polypi of the vocal cords, which had been operated upon in the clinic. In these the diagnosis of tuberculosis was evident.

Prof. CHIARI remarked with reference to Dr. Panzer's cases that he himself had submitted one of these polypi to serial section, and on that account had not been able to seek for tubercular bacilli, as the sections had already been imbedded in Canada balsam. In the case of the patient Muhle there were undoubted tubercles with giant cells, but they ought, however, to have been stained for bacilli. In the third case which he had observed, and examined microscopically, there were abundant bacilli in the sputum. In the papillary outgrowths there were tubercles with giant cells.

Dr. HAJEK. *Tuberculosis of the Epiglottis.*

This was a case in which he had removed the epiglottis *in toto*. Thereupon the patient improved very much, and gained twenty kilos in weight. However, lupus nodules formed upon the face. Dr. Koschier had seen the case three years before, and then made a diagnosis of lupus.

Dr. ADOLPH HELLER (Nurnberg). *Are there Idiopathic purely Primary Diseases of the Larynx, and, if so, What are they?*

Dr. Heller was of the opinion that with the exception of traumatic cases the majority of such diseases are secondary, either brought about by affections of the general system, or from diseases of the portions of the air-passages lying above the larynx. He laid the greatest weight upon the local treatment of the upper air-passages, and considered that the field for the introduction of instruments in the larynx was a very limited one.

Dr. RETHI expressed himself to the effect that catarrh of the larynx is always accompanied with nasal and pharyngeal catarrh, that benign growth of the larynx only appeared when these parts were diseased, and in particular he offered a strenuous protest against the idea of being able to remove catarrhal changes in the mucous membrane by means of douches.

Dr. ARONSOHN (Ems-Nizza) stated that in most cases in which he had used the Ems waters he did not pour them into the nose either with a teaspoon (M. Schmidt), nor with one of the glasses devised by Fraenkel and Broich, but he recommended that the Ems water, heated to blood heat, should be drawn slowly and quietly into the nose, because only in that way was it possible to wash out the upper part of the nose and pharynx. If the water is poured in it goes along the floor of the nose and behind the uvula straight into the mouth. In swellings of the false vocal cords such proceedings seldom bring about any good result, but better even in pachydermia of the larynx, even in the typical shell-formed thickening at the vocal processes. The sniffing up of the water is contra-indicated in acute or chronic infectious inflammations of the nose such as influenza.

Prof. CHIARI thought that irrigation alone was only very seldom of any use.

Dr. BLOCH (Freiburg-in-Bress) protested against the view of Heller that the connection between laryngology and the rest of medicine was too much disregarded, and he called attention to the work which he himself published in 1889, upon a pathology of mouth-breathing, in which particular attention was drawn to the relations of that condition from the general points of view.

Dr. GOLDSCHMID. *A Case of Tumours in the Larynx and General Tuberculosis.*

The patient, who accidentally happened to be in Vienna, had been treated eight years previously for severe tuberculosis, and in addition to large tumours in the larynx he had the general evidences of that disease. The tumours were so large as frequently to occasion suffocative attacks. In one of these the patient was tracheotomized by Dr. Fischer (Meran). From that moment the severe process came to a standstill. The tumours retrogressed, and healing took place in the lungs. The patient kept his health, became stout, fit for work, and was able to follow his calling as chemist and microscopist. Before the operation there were numerous bacilli in the sputum, but since then they completely disappeared. In the larynx there were still to be seen signs of a local tuberculosis.

Prof. H. L. WAGNER (San Francisco). *On the Value of the Antroscope in Diseases of the Antrum of Highmore.*

Prof. Wagner gave a demonstration of an antroscope. He stated that it could be used with advantage in all obstinate diseases of the antrum of Highmore, but only after an alveolar opening into this cavity. The instrument presented the advantage that it could be turned in different directions, of course only round one axis, so that the different parts of the cavity could be examined. It was lit up by means of Reiniger's panelectroscope.

Dr. BAUROWICZ (Cracow). *Scleroma Laryngis under the Form of Sclerosis Interarytenoidea.*

In this case there was the rare condition of limitation to the posterior wall. On account of the shrivelling of the infiltration there came on complete approximation of the arytenoid cartilages and fixation, so that the glottis was contracted to a narrow slit. It was intended to remove the infiltration with the curette, but on account of the severe dyspnoea it was necessary to perform tracheotomy. After a few days an endeavour was made to incise the inter-arytenoid region with the laryngeal knife; the arytenoid cartilages separated a little, and became slightly more movable, but as it was seen that endo-laryngeal curettement was insufficient it was determined to perform laryngo-fissure, and to scrape out the infiltration. The cartilages separated from each other, remained removable, and the glottis presented its normal width, so that after a short time it was possible to remove the canula.

Dr. BAUROWICZ (Cracow). *A Few Words about the Bacteriological Investigation of Morbid Secretions from the Upper Air-Passages.*

In all cases of so-called hypertrophic inferior corditis, with nothing to suggest scleroma, we ought to make inoculations with the secretions from the nose and larynx, as also in cases where a portion removed from the larynx suggests scleroma, in order not to be able to speak of a primary form of laryngeal scleroma. Inoculation is still more important in cases in which the pus removed from hypertrophic corditis shows no structure characteristic of scleroma, which also may occur along with typical changes in the nose or the naso-pharynx. In this way we may find out whether all cases of hypertrophic corditis are due to scleroma. The writer finds that inoculations directly on agar-agar are the most convenient and rapid. In this way he examined the pieces which he had removed without neglecting at the same time to submit them to histological examination.

Dr. HAJEK did not consider that the examination of the secretion alone had the same value as the investigation and cultivation of the excised portions. There are, under normal circumstances, capsul-cocci sometimes in the nose and in the upper air passages, which cannot with certainty be put down as bacilli of rhinoscleroma. He was, therefore, of opinion that wherever it was possible the nature of the disease should be proved by means of the removal of small portions and cultivation made from these.

Dr. KOSCHIER thinks that the bacteriological examination of nasal

secretion, and especially that of the naso-pharynx, is of value for the determination of the diagnosis of rhinoscleroma. He found the culture proof of scleroma bacillus successful in all the patients examined by him. The differential diagnosis between scleroma bacilli and ordinary capsulococci is not so difficult, as there are quite sufficient factors for the differential diagnosis.

Dr. GROSSMAN said that the question as to whether there was a primary scleroma of the larynx, or whether it only occurred consecutively to the disease in the nose, offered the same difficulties as the question whether there was such a thing as primary tuberculosis of the larynx or not. With reference to the appearance of hypertrophic sub-corditis vocalis, he desired to say that although scleroma comes on in the great majority of cases with this appearance in the larynx, still this form of disease is also very frequent in cases in which there certainly is no scleroma present. He referred to a case which he had observed in Schroetter's clinic several years previously, in which the growth under the vocal cords reached almost to the middle line, and in which tracheotomy had to be performed on account of the threatened suffocation. After a few months the growths mentioned disappeared spontaneously during the use of the canula.

Prof. CHIARI asked if Dr. Grossman's case was not one of acute catarrhal red swelling under the glottis. Such growths are known to subside very easily. In pseudo-croup Prof. Chiari frequently saw such swellings.

Prof. JUFFINGER drew attention to the fact that in old scleromatous sub-cordal infiltration it may happen that the histological examination of extirpated portions may show no scleroma tissue, since in such cases the process in the superficial layers has passed off, and there remains only an increase of the connective tissue and thickening of the epithelium.

Prof. PINIACZEK remarked that all the cases which Dr. Baurowicz had described were from his department, and they were certainly only scleroma cases, but that does not lead one to the conclusion that every case of hypertrophic inferior corditis is scleroma. In children in particular he had seen after the disappearance of attacks of pseudo-croup a chronic swelling of the mucous membrane below the edges of the vocal cords, and he had also had two cases in adults, in which, on account of stenosis from hypertrophic inferior corditis, tracheotomy had been performed, and the growths disappeared within a few weeks. In perichondritis he thought cases might show themselves presenting the picture of hypertrophic inferior corditis, in which any immobility of the arytenoid cartilages is quite absent, but such cases are rare. Lastly he mentioned that the cases which Stock had described as blennorrhœa all presented the appearance of atrophic rhinitis, and changes chiefly in the anterior angle of the glottis, while in none of them was there any hyperplasia below the edges of the cord.

Prof. JUFFINGER (Innsbruck). *Lichen Ruber of the Larynx.*

Prof. Juffinger reported an affection of the larynx accompanying lichen ruber acuminatus of the skin, and he showed microscopical sections

which had been prepared from extirpated portions. This presented itself in the form of nodules, which were situated especially on the free border of the epiglottis. They were in places white, and in other places of a bright red, and to the feel of hard consistence. Microscopically they showed a dense cellular infiltration of the most superficial parts of the mucous membrane, and which localized itself particularly around the vessels.

Dr. NEUMANN. *New Investigations into the Mechanism of Laryngeal Muscles.*

Dr. Neumann, at the outset, recapitulated his work upon the movements of the vocal cord in the vertical plane. He found, in fact, that during phonation the vocal cord—contrary to the generally received idea—did not rise, but sank. Regarding the crico-thyroid muscle, he found that it was not an adductor of the vocal cords; and further, that dyspnoea, due to paralysis of the recurrent, was not removed by section of the superior laryngeal nerves. Among dogs who had been subjected to section of the recurrent nerve, some lived, and some became dyspnoic, the difference depending upon the temperament and on the restlessness of the animal. If the animal became dyspnoic, the circumstance was not altered if the two crico-thyroid muscles were cut through, and tracheotomy had to be performed.

Dr. GROSSMAN said that on anatomical grounds it seemed to him very striking that the paralyzed vocal cord should lie on a higher level than the non-paralyzed one. The crico-arytenoid joint had an oblique surface, and the vocal cord, when adducted, had to move from below and without, upwards and inwards. He considered that the crico-thyroid muscle was, unquestionably, not only a tensor, but also a powerful adductor.

Prof. CHLARI thought that it certainly was not the principal function of the crico-thyroid to effect adduction of the vocal cords.

Dundas Grant (Trans.).

SIXTY-SIXTH CONGRESS OF GERMAN NATURALISTS AND PHYSICIANS, VIENNA.

23rd to 30th September, 1894.

OTOLOGICAL SECTION.

Report by Dr. B. GOMPERTZ.

("Monatsschrift für Ohrenheilkunde," October, 1894.)

Translated by Dr. DUNDAS GRANT.

First Sitting of the 24th September.

The introducer, Prof. POLITZER, warmly greeted the members of the section in a long and impressive speech. He dwelt upon the progress which otology had made since the time when this assembly last met in Vienna in 1856, and he

expressed his expectation that the present otological section would have considerable influence in advancing science, and the knowledge of the great importance of otology.

The Senior Secretary, Dr. Docent BING, communicated the names of the newly-added members, and read shortly letters of apology for absence and of greeting from Profs. BARTH and BEZOLD.

Meeting of the Sitting of the 25th of September, forenoon.

President—Dr. CHARLES DELSTANCHE.

Dr. FRITZ ROHRER. *The Anomalies of Formation of the Auricle.*

Dr. ROHRER particularly remarked upon those congenital anomalies of the auricle which affected the upper part of the anti-helicis—the crusta anti-helicis. The absence of some part of the anti-helicis, as also the occurrence of supernumerary crura in the direction of the tubercle of Darwin, and opposite the crus helicis, was explained by the different morphological embryonic dispositions of the different parts of the anti-helix, as had been laid down by Schwalbe, according to their dependence upon the system of branchial calculi and to construction of the ear-fold. As a unique case was described a fusion of the crura anti-helicis with the crus helicis to a single horizontal limb. His thesis was illustrated by numerous photographs, water-colour and sepia drawings.

Prof. GRADENIGO remarked that the part described by Rohrer as the fourth supernumerary crus anti-helicis had already been described by him. He looked upon it as homologous with the so-called central tubercle of cattle and sheep.

Prof. GRUBER showed three very striking casts.

Dr. ROHRER. *Hysterical Deafness and Torpor of the Acoustic Nerve.*

The reader enlarged upon these peculiar forms of disturbance of hearing, depending sometimes upon pure central, sometimes upon combined central and peripheral factors, founding his remarks upon an extensive clinical description of the investigations hitherto carried out, and he brought forward several pregnant cases illustrating the history of the disease. He described further the relation of hysterical deafness to hypnotic impressionable patients, and the coincidence and synergy of hyperæsthetically affected and irritated parts of the organ of hearing.

Prof. POLITZER would exclude those cases from the group described by the reader in which a lowering of the energy of the auditory nerve was present along with temporary fluctuations, and in which, according to his anatomical investigations, there is no disease of the mucous membrane of the middle ear, but a primary affection of the capsule of the labyrinth, which is combined with palpable changes in the labyrinth itself.

Prof. URBANTSCHITSCH remarked that the cases of increased ossification round the labyrinthine windows, described by Prof. Politzer, could not be confounded with the cases described by Dr. Rohrer as torpor of the acoustic nerve, because in the latter the fluctuating character of the deafness was noticeable, as it was, for example, in a case which he himself had recently seen in which only at certain hours of the day was there any high degree of deafness present. That affections of the middle ear could have an influence upon the acoustic nerve was proved by the influence of that nerve upon the opposite ear, as observed by himself in the treatment of one ear at a time, and the possibility by massage of the tube (bougie) to act upon the deafness even when the stapes was isolated.

Prof. GRADENIGO thought that it was not possible to establish the existence of an exceptional nature for the torpor of the acoustic nerve described by Rohrer. This torpor corresponded exactly to hysterical hyperæsthesia or anæsthesia. Complete hysterical deafness can occur as a solitary phenomenon without any other hysterical signs.

Dr. BRIEGER stated that also in traumatic neurosis he had often found symptoms which exactly corresponded to those described by Rohrer. There is, however, therewith almost always a distinct lowering of the sensibility of the meatus and membrana tympani, extending even to complete anæsthesia. Along with the agreement between such undoubtedly hysterical cases and those described by Rohrer, Dr. Brieger sees no necessity for the establishment of a peculiar clinical picture to be described as torpidity of the auditory nerve.

Prof. ZAUFAL entirely agreed with this, and with Prof. Gradenigo's opinion, and he advised that the classification of torpidity of the auditory nerve as a distinct form of disease should be allowed to lapse.

Prof. GRUBER wished to impress the fact that there are still objective changes in the middle ear which it is impossible to diagnose in the living, especially when the membrane is intact, and he thinks that we ought only to diagnose deafness as hysterical when there are at the same time other appearances pointing to hysteria. Hysterical deafness is then a singularly rare complaint.

Dr. EUGENE MONPURGO asked Prof. Gradenigo how, in the presence of deafness without other symptoms, one is justified in diagnosing hysteria, as he, under the circumstances described, had not ventured to make such a diagnosis.

Dr. ROHRER remarked upon the difference between hysterical deafness and torpor of the acoustic nerve to the effect that in the latter cases there were no hystero-neurasthenic symptoms present, while along with great diminution of bone-conduction and a high degree of deafness for speech the perception for high tones remained complete. On the other hand, in simple affections of the middle ear and Eustachian tube, bone-conduction is preserved or even increased.

Dr. SZENES (Budapest). *Deaf-Mutism.*

In the winter months of the school year 1891-92 Dr. Szenes examined the one hundred and twenty-four pupils of the District Deaf and Dumb

Asylum at Waitzen, near Budapest, and had already made some statistical communications in the demographical section of the Eighth International Congress at Budapest. He confined himself now to repeating the results of the operations then set forth. Pathological changes in the organ of hearing were present in twenty-two cases, 17.75 per cent. Of these only eight concerned the middle and internal ear, the remaining fourteen the outer ear. Regarding the remains of hearing power he found the following: The watch was distinctly heard in six cases in contact; Politzer's acoumeter was felt in fifty-eight cases by bone-conduction, twenty-three times from the mastoid process, and fourteen times from the spot in front of the tragus (best), twenty-one times sometimes on the one spot and sometimes on the other; for the tuning-fork, air-conduction was in eighty-three cases completely absent. The remaining forty-one cases were undecided. Galton's whistle was heard by twenty-two children; five of them could hear it even at a considerable distance, twenty to sixty centimètres; speech was heard in thirty cases, eight times was vowel hearing only for "R," four times hearing for sentences. By means of ear-trumpets there was in no case any better hearing than without. The perception of noises was proved by means of clapping the hands, and was present in only forty-three cases. In sixteen it was heard at a distance of eight mètres, and in these whistling was also audible. Regarding the residua of hearing power which were found, Dr. Szenes asks himself whether in such cases the child was in its right place in a deaf and dumb institute, or whether in reality he ought not to go into the public school? and he thinks it is always necessary to give the preference to the deaf and dumb school. He does not venture an opinion as to whether the methodical hearing exercises frequently practised of late are more advantageous than the regular deaf and dumb instruction, as this subject was to be brought up at one of the later meetings.

Dr. ROHRER remarked, with regard to the tests for hearing on deaf-mutes employed by Szenes, that along with a palpable deaf-mutism there may also occur a psychical deafness in children. This is present in those cases, certainly very uncommon, of apparent deafness in which by means of instruction and diathetic regulations the faculty for speech is developed in a comparatively short time.

Dr. SZENES intended to return to the question when Prof. Urbantschitsch's paper came before them. Regarding the therapeutical results described he thinks that in judging of the value of methods of treatment we must be very cautious, and especially with regard to the correct distinction of the cases.

Dr. SZENES. *Further Contributions to the Healing Influence of Complications of Acute Suppurative Inflammation of the Middle Ear.*

In the first assembly of the German Otological Society (1892) Szenes communicated a *résumé* of twenty-one cases of acute suppuration of the middle ear, in which after a shorter or longer duration complete recovery took place. In these cases, in a striking way, an external diffuse otitis

was associated with the tympanic disease, and the symptoms of the primary tympanic trouble completely disappeared along with the healing of the complication, the latter having lasted only a few days. Since then he had observed other twenty striking cases, and in looking over the history of these cases he is more confirmed in the opinions he expressed before. The middle-ear inflammation with the well-known symptoms—pain, fever, subjective noises, etc.—takes its regular course. With the occurrence of a suppuration the constitutional disturbances diminish, and only the otorrhœa remains. This then, according to rules, is treated with antiseptics, it becomes less, but does not cease until there again, along with reactive symptoms—pain, fever, swelling of the external meatus, etc.—an otitis externa occurs, which leads to healing in a few days, when at the same time the tympanic suppuration is found to have ceased. This occurs with such regularity as to leave no doubt that we must in these cases recognize the curative influence of the external otitis.

Dr. BRIEGER remarked that he frequently observed in the otitis externa, which was occasioned by the bacillus pyocyaneus or by excision of the ossicles, a strikingly rapid diminution of the middle ear process. He asks whether, perhaps, the obstruction of the meatus, brought on by the otitis externa preventing secondary affection of the tympanum from the meatus, plays a rôle in this course of events, and he mentioned also the intentional inducing of external otitis for therapeutic purposes as recommended by other people, but he considers this so doubtful that he feels obliged to offer a strenuous warning against it.

Dr. KAUFMANN asks how it appears that Dr. Szenes has so frequently observed otitis externa along with otitis media, as in his experience this occurrence had been extremely rare.

Dr. GOMPERTZ remarked that when in the course of a purulent inflammation of the middle ear a similar inflammation affected the outer part, the latter then became much more prominent, because it caused the greatest amount of pain. If during this the inflammation of the middle ear became cured, we were not thereby entitled to speak of any particular influence wrought by the external otitis.

Dr. SZENES replied that the artificial induction of otitis externa, as recommended by Colladon in the otological section of the International Congress of Rome, and mentioned by Dr. Brieger, ought not to be confounded with his cases. He was not concerned with an artificially produced complication, but with one which was spontaneous and without any obvious cause. In these forty-one cases the inflammation of the middle ear was treated just exactly as in other cases of the same disease.

Dr. SZENES. *The Therapeutical Value of Glycerine of Carbolic Acid and Menthol in Diseases of the Ear.*

The favourable results mentioned by Porter, Bendelack-Hewetson, Hartmann, Rohrer, Monpurgo, and more recently Haug, have been entirely borne out by Dr. Szenes' experience in one hundred and thirty cases. Ten, fifteen, or twenty per cent. carbol glycerine is suitable for the

initial stage of acute median otitis in the form of instillation. This should be very warm, and employed only in the stage preceding perforation of the drum, in which they frequently bring about a complete retrogression of the whole process. If the drum undergoes spontaneous perforation, or there exists already a perforation of older standing, then such strong carbolic solution should not be used. During the last five years he has used the ten and fifteen per cent. solution of menthol in oil in one hundred and fifty cases, and he can recommend it in the treatment of furuncle of the meatus, as also in diffuse swelling of the walls. Along with the antiseptic action, the convenience of this as a method of treatment, especially for the purposes of a polyclinic, must be very highly spoken of. The pledget of wool, soaked with the mentholized oil, is left always for twenty-four hours in the external meatus. The solution causes a burning feeling, which generally passes off very soon, but sometimes only after several hours. It is not always able to prevent recurrences, but still in many cases it suffices. It is most suitable in cases in which, after a furuncle has been incised and its whole contents removed with the sharp spoon, the menthol-oil-tampon is introduced into the meatus. In this way the process of healing is very much shortened. Narrowings of the external meatus brought on by furuncle or diffuse otitis externa usually disappear completely, or at all events become very much diminished in twenty-four hours under the action of a menthol-oil-tampon.

Dr. GOMPERTZ wished to recommend the use of menthol, which has the effect of contracting the vessels even through whole skin, and acts at the same time as an anodyne and an anti-inflammatory remedy, also in cases of simple middle-ear inflammation without perforation. He found in the painful stage very good effect from the instillation of a one or two per cent. solution of menthol in oil, especially in white vaseline oil. Further he has tested the use of menthol in a five or ten per cent. oily solution as a very valuable and mild antiseptic for the interior of the tympanum in chronic suppurative inflammation of the middle ear.

Prof. GRADENIGO (Turin). *Sclerosis of the Middle Ear as a Parasyphilitic Affection in late Hereditary Syphilis.*

Since the Eleventh International Medical Congress at Rome, where he communicated his first observations, he has been able to study a long series of new cases, in which with certainty, or with the greatest probability, sclerosis of the middle ear had developed as a consequence of hereditary syphilis, a form of disease which corresponds exactly to the clinical picture of chronic catarrhal inflammation of the middle ear, with extension to the internal ear, such as we meet with in females with a tendency to hereditary ear disease, or in individuals the subjects of hereditary tuberculosis. It differs from this form frequently only in its greater malignity. It progresses in spite of all local treatment, and when it has reached such a stage that it awakens the attention of the patient it is very slightly influenced by specific treatment. The sclerosis may appear to be a slight sub-form of that typical ear disease of late hereditary syphilis which was described by Hutchinson and Hinton. In

point of fact one meets with all possible grades between the two forms. The functional disturbances may in the one, as well as in the other, point particularly to the conducting apparatus, with negative appearance of the membrane, or to the perceiving apparatus. The diagnosis may sometimes be difficult on account of the absence of any other symptom of hereditary syphilis. In those cases we may only be put upon the right track by the discovery of this affection in the parents, or the careful examination of the patient's brothers and sisters. We must always be on the look-out for hereditary syphilis in cases of progressive deafness as such, which rapidly comes on with the appearances of participation on the part of the inner ear in young persons, without there being in the family any tendency to hereditary tuberculosis or deafness. It is Prof. Gradenigo's opinion that when this etiological factor is recognized by the aurist as well as by the syphilologist, and the appropriate general treatment is started in an early period of the disease, the results will be distinctly more favourable than is the case when the treatment is undertaken later on. Auricular sclerosis, as well as the typical deafness of hereditary syphilis, is met with in females oftener than in males. It develops, however, later than the typical deafness (syphilitic); instead of occurring at puberty, it comes on between twenty and thirty.

The individuals in whom sclerosis usually comes on are often of weak build, of lymphatic and serofulous habit, in whom in childhood typical adenoid vegetations in the pharynx and chronic hypertrophic or atrophic inflammations of the nasal cavities have been present. They may, however, appear quite robust, and free from all disorders of the nose and naso-pharynx, at least at the time when they come under investigation. The ear affection under consideration may be the only symptom of the syphilitic diathesis present, but at the same time it may often, like the typical form, be accompanied by the recognized malformations of the teeth and by interstitial keratitis. In very rare cases it comes in company with gummatous and ulcerative affections of the nasal and pharyngeal cavities induced by hereditary syphilis. Auricular sclerosis in hereditary syphilis must be classified among the para-syphilitic affections in the sense in which lately Fournier has defined these. It is specific as regards its origin, but not as regards its nature.

Prof. GRUBER drew attention to the fact that his late deceased assistant in his ear clinic, Dr. Wiethé, endeavoured to make use of his clinical material in this direction, and came to the conclusion that in many cases of so-called hyperplastic middle-ear inflammation syphilis could be made out to be at the foundation of the affection. He himself wished to communicate that he in his time had already worked along with Sigmund and Hebra in this direction, and had arrived at the conclusion from his clinical experience that in many cases of sclerosing inflammation of the middle ear distinct improvement could be brought about by anti-syphilitic treatment.

Prof. GRADENIGO. *The Auditory Field and Auditory Acuity.*

It is necessary, as Zwaardemaker has pointed out, in the description of the auditory field to keep account along with the middle tones also of the

lower and upper limits of audition. By using the series of squares for the determination of the diminution of intensity of the tuning-fork in relation to time we have the auditory acuity for any given fork, if we compare the percentage of duration of perception in the patient with the normal percentage, and note the corresponding value of the square root and not the square of the percentage. It is not exact to compare the hearing power for tones in general with that for speech, as Zwaardemaker proposes; if we wish to arrive at the relation between them, then hearing power for the voice should only be compared with that for high tones. For the determination of the lower and upper limits of hearing power the intensity of the sound is of great influence. The results which have been arrived at with Galton's whistle stand, especially in disease of the middle-ear, in opposition to those which we get from König's rods. The maximum of intensity of sound of Galton's whistle is from the fourth to the sixth division. To this maximum the upper limit of hearing power usually corresponds when the conducting apparatus is in bad functional condition; König's rods gave in general more exact results.

The FRENCH SOCIETY of OTOTOLOGY and LARYNGOLOGY.

Paris, May, 1894.

President—Dr. CARTAZ.

DELIE. *Treatment of Mucous Polypi of the Nasal Fosse.*

Two processes are rapid and efficacious, viz., *avulsion* and *excision*. The parts should be antiseptically irrigated, and well illuminated before operating.

1. *Avulsion* necessitates blind manipulation and instruments which are quite abandoned nowadays. It produces pain, hæmorrhage, and lesions of the turbinateds and mucous membrane.

2. *Excision* may be performed with cutting forceps, ligature, or galvano-cautery.

Forceps are little desirable for large pedunculated polypi, but useful for small multiple polypi obstructing the nasal vault, in hypertrophy or polypoid degeneration of the turbinateds, and certain sessile polypi with large base.

Ligature by the cold snare produces hæmorrhage depending on the degree of vascularization of the growths.

Galvano-cautery prevents hæmorrhage. Antiseptic washes are daily employed after its use.

Recurrences are prevented by cauterizations. The deepest and easiest are produced by the galvano-cautery.

Electrolysis loses time, and is inferior to other means. Recurrences occur, especially in cases of multiple polypi of the vault.

If polypi cause complications of the various sinuses, affections of these cavities, inflammatory reciprocally, can provoke polypoid neoplasms of the turbinateds.

WAGNIER. *Treatment of Mucous and Fibro-mucous Polypi of the Naso-Pharynx.*

In the naso-pharynx are generally employed ligature and avulsion, either through the nose or mouth. Through the nose the forceps can rarely be used; the metallic loop is generally employed. The form of the tumour often causes the loop to glide over it; therefore, when the wire is in sufficient contact with the polypus, a galvanic current should be passed through it with slight traction of the loop, so that the part seized is not cut through, but a sort of collar is formed, permitting a traction of the whole instrument forwards. The instrument devised by Lange is also useful. Most specialists prefer to extract naso-pharyngeal polypi through the nasal passages. If through the mouth, it is difficult to encircle the pedicle, and some instrument for avulsion has to be also employed.

Naso-pharyngeal forceps have been employed, passed through the loop introduced through the nose or mouth to fix the polypus. The tumours have been torn off by the finger (Zaufal), or finger-guard (Bonnet).

The most frequent after complication is Eustachian or middle-ear inflammation, which may be guarded against. Washes of boracic acid or antiseptic solutions are useful after operation. Operation is usually quite successful, and recurrence is rare. Remains of a pedicle may be destroyed by the galvano-cautery or chromic acid.

MOURE thought that Wagner had not sufficiently insisted upon a peculiarity of fibro-mucous polypi of the naso-pharynx, viz., their possession of cystic anfractuosités, so that when seized with a wire loop a large quantity of serous or purulent liquid flows. Hæmorrhage is *nil*. He prefers in these cases operating through the anterior nares.

GAREL, when hæmorrhage occurs consecutive to ablation of polypi, has observed that it is arrested by blowing the nose. He operates on naso-pharyngeal polypi through the anterior nares with the cold loop, projecting the tumour with the finger. Belloc's sound may be employed to push the tumour, which may be seized with the crotchet, and removed by forceps. He never employs the galvano-cautery loop, and considers it unreliable and dangerous.

VACHER, with the cold loop, had removed forty-two polypi, some the size of a cherry, from a woman aged sixty.

NOQUET had found trichloroacetic acid very serviceable as a caustic. It is not toxic and produces no reaction or pain like chromic acid. Pedicles of polypi rarely recur after cauterization with deliquescent chloride of zinc.

POYET has for long renounced the cautery for polypi, having remarked that they always recur. After several extirpations they cease at last to recur.

LUBET-BARBON. It cannot truly be said that nasal polypi recur, but new ones are pushed forward at the side of the old ones. Deep curettage of the middle meatus after ablation of the larger masses is a good means of preventing recurrence.

BONAIN had seen a polypus of the inferior meatus recur and had found the curette very serviceable.

CASTEX. *Vocal Disability.*

Causes: (1) *For the Speaking Voice.*—Speech fatigues the vocal organs more than singing, both in singers who declaim and teachers. An orator is easily fatigued when his voice departs from his register. Reading in a high voice is most fatiguing. Feeble articulation is a cause of prompt fatigue. The more rudimentary the art of speaking, the more frequent are the alterations of the vocal organs (granular pharyngitis, clergymen's pharyngitis, etc.). The voice is mismanaged when used in all the intensity of which it is capable. The condition of the room acoustically has much to do with disability; Grecian architecture, with its angles

and lines, is less favourable to oratory than the more or less accentuated curves of Gothic or Roman buildings.

(2) *For the Singing Voice*.—Two cardinal rules ought to be observed; not to too much mount the chest voice, but when arriving at the acute, to take the head-voice; and renounce the clear *timbre* to take the lower (sombre) *timbre* as the notes of the voice become more acute. To ignore these rules is to risk breaking the voice.

There should also be solid and synergic contraction of the various muscles which contribute to the vocal phenomena in the chest, larynx, and pharynx. It is not in producing the voice strongly, but badly, that it is over-strained. Laryngeal assistance ought not to surpass certain limits; the pharynx and palate (resonators) ought to be utilized—being less subject to fatigue than the larynx, they concur powerfully in perfecting the sound. In these regions is formed the *timbre* of the note, and of him who uses it habitually it is said, “*Il chant sur le timbre*.” The vocal cords and whole larynx are by this process relieved of a part of the fatigue. The *diagnosis of the voice* is one of the most delicate tasks of the singing master, and a professor who will have made tenors sing baritone, or contraltos sing mezzo, answers for the destruction of young voices.

Defective respiration is very hurtful. Most singers use diaphragmatic respiration, but the “*Respiration dans le Chant*,” by Dr. Joal, may be read with interest on this subject.

“*Coulage*” is another condition of fatigue. By this is meant the issuing without sonority of a certain quantity of expired air, either before the emission of the note, or during its emission, or at its termination. It is combated by “*coup de glotte*,” but it is difficult to avoid it in certain affections of the larynx (nodules on the vocal cords opposing their contact).

Dry rhino-pharyngo-laryngitis impairs the vocal function especially. Hypertrophic rhinitis and mouth-breathing do the same. Too much blame cannot be given to a practitioner who allows an artiste to sing while suffering from a cold or inflammation of the respiratory mucous membrane.

Female voices are at their worst during the twenty-four or forty-eight hours preceding menstruation. It is sometimes stipulated that they shall not sing during three or four days of each month. To act differently would be to abuse the voice. Provincial artistes, who rest less, appear in many *rôles*, whatever the condition of health, and are encored doubly and trebly, fail more quickly than those of large capitals.

Composers are accused also of writing beyond the powers of the singer. The condition of the room is to be considered. It is bad when new, over-ornamented, or deeply recessed. The plain oblong chambers of the Italian model are the best.

II. *Effects of Vocal Abuse*.—They are immediate or consecutive. Vocal fatigue appears first, then the fear that the voice will suddenly fail, paralyzing the singer yet more. Then follows cramp of orators and cramp of singers. Laryngoscopically during this period is seen general congestion of the larynx.

The remote effects are: (1) trembling (a sign of decline of the voice); (2) difficulty of singing in half voice or half tone (a sign of the bad condition of the vocal apparatus); (3) “*la roulette*” (a kind of shaking—*grelottement*—obstinately recurring on a note which is nearly always the same); (4) the loss of high notes; (5) the failure of homogeneity in the medium, etc.

Men and women do not show the phenomena in precisely the same order; in men it is rather “*roulette*,” in women loss of the lower notes of the head voice. These affections answer to material alterations of the vocal apparatus, emphysema, nodes, polypi, etc.

III. *Treatment* is preventive or curative. To prevent abuse a voice ought to be managed from early, say from five or six years of age. During breaking there ought to be rest; this period passed, it recovers all learned from the gymnastics of infancy. In full use these should be *nulla dies sine cantu*, but one hour of daily work on the average is sufficient, in exercises of four quarters of an hour with intervals of rest, with annual vacations of complete rest. The singer must remember that an average compass is only twelve notes, to which training can add two high and two low notes, and to surpass this limit is dangerous. Curative means comprise rest, electricity and massage, and hydro-therapeutics.

POYET. *Vocal Overstrain in Singers.*

In singers this may be, and commonly is, of laryngeal origin; sometimes it is of respiratory origin.

The resistance of the larynx to fatigue is not the same in all. It differs in individuals according to age, sex, and the degree of training; only the latter can allow of a singer furnishing a volume of voice sufficiently modulated and powerful for many hours. Dr. Joal ("Respiration dans le Chant") advances the contention that vocal compensation is indispensable to the singer—that is, the co-ordination of respiration and tension of the vocal cords in the emission of sounds. Lermoyez has insisted on the same point. The professional subjects of overstrain are often pupils, who complain of loss of tone and freshness, singing with difficulty, conscious of effort which fatigues, feeling a certain respiratory trouble (short breath), pain in the muscles of the neck and chest in some spot, "hemming," and collections of mucus, which make him sing false. This is often due to use of vocal exercises of extraordinary length and power, exaggerated work fatiguing the larynx, without method or understanding. We find general congestion of the pharynx and larynx, the pharynx granular, the palate red, the uvula lengthened, swollen, or opaline, the vocal cords red, or, if long-standing strain, a little grey, the edges fringed with mucus, the redness especially occurring at the anterior part of the cords (the vocal angle). If loss of voice does not occur, which is frequent, there is a certain thickening of the parts, and the evil is then irreparable. Varicose dilatations appear, and localized epithelial proliferations (nodes). These nodes, almost always symmetrical and on the middle of the free edge of the cords, produce changes in the half-tone especially. The singer can sing with force, but no longer with gentleness. There is also a whistling, due to escape of air. Young singers cannot always avoid this overstrain; older artistes know better than accept a *rôle* which will compromise their voice.

Nervous troubles and loss of health from anxiety follow.

There is generally painful dryness in the pharynx or naso-pharynx, sensation of foreign body in the larynx, discomfort and pain over the upper part of the sternum, intercostal spaces, or over the diaphragm, and a collection of mucus in the broncho-laryngeal tract. In the first stage (merely hyperæmia) there is burning sensation and expulsive cough. If the laryngeal fluxion is more marked the sputum becomes blood-streaked, from rupture of small pharyngeal or laryngeal vessels. In a further stage expectoration is less abundant but more tenacious, mucus covers the free edges of the cords, which vibrates at the same time as the cords, and produces bizarre accidents of voice, bitonalities in half-tones, etc. Poyet endorses Joal's view that these accidents arise chiefly from want of vocal compensation, but makes laryngeal lesions—mucous, vascular, and muscular—play a more important part than Joal admits, and, when overstrain is of respiratory origin, it is evident only when it has determined appreciable laryngeal disorders. Whatever the origin, it is slow of cure, and requires complete rest of the larynx. He concludes as follows: Overstrain of the voice is produced by fatigue or

abuse of the larynx, as well as by fatigue of the respiration, when this is either insufficient or badly managed. In this case, the balance is not adjusted between the vibrating element and the motor element. Overstrain, whether of laryngeal or pulmonary origin, is always manifested by the same functional troubles, these latter being produced by lesions affecting the different parts of the larynx (mucous membrane, vessels, glands, muscles). It should be treated in its simple acute form with rest and ordinary antiseptic methods; in the chronic form, the organic lesions produced are among the most difficult to cure in singers.

VACHER endorsed Poyet's views, and could not accept some of Castex's ideas. The use of the "coup de glotte" should be very moderate. It necessitates complete occlusion of the cords and approximation of the ventricular bands, and can rapidly lead to tremor of the voice (*chevrotement*) or vicious emission, with congestion of the larynx. The method which consists in employing the syllable *la* in place of *ha* is preferable. It obliges the beginner to transform the tongue into a gutter, carrying it forward against the dental arch; the vocal portion is largely opened, "coup de glotte" is suppressed, the voice flows normally without effort or loss of air. Singing should be interdicted, especially in males, during breaking of the voice, for then the vocal cords contract unequally. His studies at the Paris Conservatoire lead him to the opinion that overstrain during this period, bad education, and pharyngitis are the causes which principally render voices delicate.

CASTEX. There are two kinds of "coup de glotte": (1) that which puts the vocal cords and ventricular bands in contact, which is bad, because it is fatiguing; (2) that which approximates only the vocal cords, leaving the ventricular bands separated. There is no effort, and it is commendable, for by impeding waste of expired air it does not strain the larynx.

TARAS. In all these questions one point has been neglected in these communications, viz., the permeability of the nasal fossæ. A chronic coryza, causing mouth-breathing, will often cause functional troubles of the larynx, determining pharyngitis and laryngitis, and we should be assured in a singer that there exists no lesion of the nasal passages.

MOURE. *On the Effect of Oöphorectomy on the Female Voice.*

The author recalls the consequences of castration in the male and the physiological relations which exist between the genital organs and the larynx. He then records two cases in which women, who had undergone ovarian castration, developed a marked lowering in the *timbre* of the voice, which, at the same time, became stronger than formerly. The author thinks that these troubles are not constant, and that it is not always easy to recognize their existence, except in singers, and especially in high sopranos. It is well known that, after a certain age, the removal of the ovaries or testicles has no effect on the larynx. Hence, one can imagine in the cases observed a development of the larynx analogous to that of puberty, with lengthening of the vocal cords.

CASTEX had studied the same questions. Two years ago he had seen a young woman of twenty-six whose ovaries had been ablated, and whose voice had undergone no modification. In another case, where the uterus and ovaries were removed, the voice, examined before and after the operation, was found after operation to have gained in power and extent. Dr. Pinard had assured him that pregnancy had no influence upon phonation, though hearing was modified by gravidity.

POYET, on the contrary, had frequently observed vocal troubles during pregnancy, especially in singers. The foetus and development of the genital organs opposed the free action of the diaphragm, rendering respiration incomplete. He believed the results of castration to be negative upon the voice. In a French

cantatrice, who has twice had ovariectomy performed, there has not been the least effect upon the larynx.

GAREL. *Two Cases of Congenital Malformation of the Anterior Pillars of the Fauces.*

About twenty cases of this malformation are on record in medical literature. In five the posterior pillars were the seat of the anomaly, the other fifteen cases affecting the anterior pillars. The author records two new observations, one of symmetrical congenital perforation of the two anterior pillars in an old man, aged seventy, who only suffered from a little discomfort in deglutition; in the second the perforation was unilateral, and situated on the left anterior pillar. Garel opposes the opinion of Fowler and Morrice, who hold that these perforations are always secondary to phlegmonous tonsillitis, scarlatina, or diphtheria. He shares the opinion of Testul, who believes in an embryonic reabsorption rather than in a malformation.

CASTEX. *Laryngeal Neurasthenia.*

Under this term the author designates certain complete aphonias laryngoscopically exhibiting a little sluggishness of the cords without glottic asymmetry. The author cites two cases in which, without having recourse to suggestion, he had obtained prompt and definite return of the voice by exercises of singing and speaking, especially exacting clearness in articulation.

GAREL for long had employed a method for treatment of nervous aphonia, which has given him the best results. At the moment of emission of the voice, he makes strong and sudden pressure over the epigastric region, and the voice often reappears immediately. He thus lately cured a woman who had not spoken for eight years. The method is of use only in nervous aphonia.

CARTAZ. Garel's method has for long been employed at the Salpêtrière for hysterical hiccough.

RAUGÉ. *Treatment of Ozæna.*

CARTAZ reminded the author that the method of extensive irrigation is of old application. Paul Reclus ("Clin. Chirurg.") relates some cases where some thirty or forty litres were used, and one case where a patient himself used daily fifty litres of milk through the nares, ending in cure.

CARTAZ believed that a high temperature of the irrigations disinfected more certainly, and revived the mucous membrane. He had latterly made an injection upon a child from whom he had operated for adenoids, and observed the liquid mixed with blood exude from the lachrymal puncta, and asked if others had observed this occurrence.

MOURE had many times seen it, and the flow of blood through these channels after adenotomy is not rare. He asked if injections, however copious, reach all the points of these anfractuons cavities, and not only the lower passages. The superior posterior part of the naso-pharynx escapes irrigation, also the antero-inferior portion of the sphenoid. These parts are often affected by ozæna. He has more faith in cleansing by retro-nasal injections.

RAUGÉ had also seen liquid emerge by the lachrymal channels. He thought that the whole nasal passages were completely washed by copious irrigations—which it is not necessary to use every day—once a week will suffice, with smaller irrigations daily.

MIOT. *Severe Epistaxis.*

Two cases are recorded. One, a patient aged twenty-one, after every violent passion had more or less abundant epistaxis recurring every fifteen days or oftener. At five or six years of age he began with a very severe hæmorrhage, which at eleven

became more frequent and abundant, occurring afterwards every day or twice a day. Subsequently they became less abundant. In 1892 a varicose condition of both sides of the septum was recognized, and treated with the galvano-cautery. It was repeated thirty times in a year without success. In 1893 there was very abundant hæmorrhage provoking syncope, and subsequent great weakness and neuralgia. Three other abundant hæmorrhages occurred during 1893, and on August 18th the author found the patient bloodless, excited, and with syncope induced on the least movement. Clots were removed and tampons introduced soaked in ergotine with strong pressure on the anterior portions of the septum. These were prescribed every twenty-four or forty-eight hours; tonics, and complete repose, with the head raised for some days.

On September 8th the epistaxes had become less, but periodical every third day at noon. Examination showed behind the posterior extremity of each meatus, on both sides of the septum a part lengthened from above downwards, where the mucous membrane was elevated, knobby, excessively red, and bleeding with the greatest ease; some enlarged vessels were discovered, but were never the seat of hæmorrhage. The septum was traversed by excessively numerous and tortuous vessels, and was very thin. The turbinateds were small and not erectile. From the negative effects of astringents and the disastrous effects of the galvano-cautery the author was not tempted to employ them again, and he determined to use the positive pole locally of a continuous current. Several needles were placed *in situ* with a current strength of sixteen to eighteen milliamperes, and tampons of ergotin were applied. After several sittings the patient on April 10th, 1894, appeared to be nearly cured.

The author has also applied the method in two other cases recorded by him ("Rev. Mens. de Laryng.," No. 11, 1894), and concludes that electrolysis (interstitial positive) should be the method of choice in all epistaxes produced in erectile or varicose tissue of a certain extent. Silver or copper needles are the best, with a current strength of sixteen to twenty milliamperes, lasting eight to ten minutes. Three or four sittings in exceptional cases, one or two in others, are sufficient.

CASTEX. *Two Cases of Rhinoscleroma.*

After a historical sketch of the subject the author recalls six cases published by himself, and observed during his scientific mission to Vienna. He gives particulars of two new cases observed in Paris, although the disease is very rare in France. It is more common in Hungary and in America, where Dr. Alvarez has made the interesting discovery that indigo produced from the fermentation of the leguminous *indigofera tinctoria* contains a microbe very analogous to that of rhinoscleroma. This investigator has also been able to produce the special fermentation of a sterilized decoction of indigofera by a pure culture of rhinoscleroma; hence the deduction that this leguminous plant might be the primary cause of the disease. However, inoculations made with a therapeutic purpose have had no result.

RAUGÉ. It seems that Castex has not made bacteriological preparations of Frisch's bacillus. He had always been struck with its resemblance to Loewenberg's bacillus of ozæna. Both are, however, very similar to Friedlander's pneumococcus.

CASTEX. *Intolerant Fissures of the Nostrils.*

Many persons feel pain in the nostrils. Castex has found in them a small fissure always situated on the anterior angle of the junction of the sub-cartilage and anterior extremity of the ala of the nose. Pressure by a probe produces pain.

Corrosive sublimate lotions, one in a thousand, and boracic vaseline cure the condition.

MOURE: These fissures are very common, and cause great nervousness in patients.

COMBE. *Foreign Bodies in the Maxillary Sinus.*

A case where a drainage tube, which had been put in a dental alveolus, had become lost, and partly penetrated into the maxillary sinus. In spite of enlargement of the alveolus, no foreign body could be found in the antrum. Four years after, the tube, measuring two centimètres, was spontaneously eliminated through the nasal passages. It was covered with sticky, black matter, and calcareous incrustations.

MOURE. *Foreign Bodies in the Maxillary Sinus.*

Cases of foreign bodies in the antrum are rare. Chiari recorded an example some years ago. Moure records the case of an individual operated upon for empyema of the sinus, who, in order to remove a piece of food, pushed a match through the alveolar opening. This broke, and one piece remained in the antrum. The foreign body was extracted with difficulty, from bleeding obscuring illumination, through the canine fossa, aided by an injection through the alveolar opening. This simple manœuvre deserves mention.

RAUGÉ had observed a similar case, ending, like Combe's, in spontaneous elimination through the nasal fossæ.

CASTEX. *Presentation of Patients.*

1. A girl with severe laryngo-pharyngeal tuberculosis cured by lactic acid applications. Although the epiglottis had been destroyed, she swallowed very well.

2. A Dahomian, eight years of age, with nasal tuberculosis of the right nostril and upper lips. Curettage cured the condition in that nostril, with, however, occlusion of the nares.

MOURE: The young man with lupus of the larynx, shown by Castex, suffers from one of those forms of tuberculosis which are curable. In spite of abscess of epiglottis, it is the rule to see no interference with deglutition in these cases.

VACHER. *Retro-Nasal Pharyngitis.*

From numerous observations the author is convinced that this complaint is often the origin of deafness, recurrent laryngitis, intermittent aphonia, and even tuberculosis, also of suppuration of the lachrymal ducts by continuity through the nose. Friction and massage of the nasal mucosa and use of sulphur waters are the best treatment.

GUILLAUME had obtained excellent results by massage with a tampon or the finger.

RAUGÉ: Five or six years ago the condition described by Vacher would have been called in Germany inflammation of Luschka's bursa, a term which has been renounced, as no one now believes in the pathogenic chimera of Tornwaldt's disease. It is the crypts in the pharyngeal tonsil which secrete in chronic inflammation of this region.

VACHER did not believe that Luschka's gland was often the cause of retro-nasal pharyngitis. He had recently seen a case of granulations of the lachrymal sac and nasal passages originating in this form of pharyngitis, and numerous laryngites and intermittent aphonias yielding to the treatment of the naso-pharynx. The larynx is a delicate organ, which ought not to be touched or irritated topically, and the neighbouring parts should be treated.

BONAIN. *Intubation of the Larynx.*

Of twenty-three cases of croup intubated the author has obtained eight cures—*i.e.*, thirty-four per cent. The youngest child was eleven months, the oldest nine,

Tracheotomy should be reserved for special and rare cases. It is very serviceable also in syphilitic or tubercular stenoses, spasm of the adductors, and paralysis of the abductors.

NOQUET. *Rhinolith.*

From a woman, aged thirty-three. It was about one centimètre in diameter, hard and rugged, and was situated on the floor of the nasal fossa, in front of the anterior end of the inferior turbinated. It produced neither discharge nor severe frontal or occipital pain, as is usual, the only symptom being bad smell.

MOURE and SABRAZES. *Bacteriology of the Nasal Fossæ.*

In a patient with myxomatous degeneration of the middle turbinateds and secretion of caseous matter Sabrazes found the latter to contain mucus, pus, epithelial cells in fatty degeneration, numerous microbes, and a large quantity of aspergillus. There is, therefore, a rhino-mycosis of aspergillus nature, but the fungus has only an ephemeral vitality in the nose, the nasal mucus (Wirtz and Lermoyez) being inimical to its growth. Schubert and Cohen (two cases) have recorded cases.

JOAL. *Tonsillar Reflexes.*

The author has already published eight cases of œsophagism of nasal origin, and now exhibited a case where dysphagia arose from hypertrophy of the lingual tonsil. He has also recorded a case where œsophageal spasm was combined with hypertrophy of the palatine tonsil. It occurred in a neuropathic young woman, in whom the œsophagism was very marked; application of the galvano-cautery led to dysphagic accidents, and reduction of the tonsil was followed by cure.

A second case was that of a young man attacked with intercostal neuralgia in the course of acute amygdalitis. The reflex origin of the neuralgia could not be doubted, since cauterization of the tonsil performed afterwards cured the intercostal pains.

CARTAZ. *Two Cases of Hysterical Deafness.*

Auricular troubles, which might be put down to hysteria, have long been looked upon as a rare manifestation of this neurosis. This rarity is only apparent, if one is to judge by numerous cases collected by Gradenigo (Turin). Two interesting observations are recorded. The first case was that of a young girl of sixteen, who had never suffered from real *crises nerveuses*. At the end of a heated discussion she received a vigorous blow, which left her stunned. She made some movements with her lips, but no sound issued from them—she was completely dumb. Two days afterwards she presented, on examination, the classical signs of dumbness. The deafness continued. There was total hemianæsthesia of the left side, without lesion in the ear. An electric current was applied to the neck, when she immediately called out, "You are hurting me." The hearing returned simultaneously. The second case was a female aged thirty-five, who had never had *crises hysteriques*, but who, after a great shock, was seized with blindness and deafness. Examination of eye and ear showed no lesion. The patient was cured by the application of a large magnet to each side of the body.

CADIER reported several cases in which it was shown that *Phthisis acquired by cohabitation* commenced oftenest in the upper regions of the larynx (ventricular bands, upper surface of the vocal cords, and inter-arytenoid space). In most cases the lesions remain for long localized to the larynx, and can only be diagnosed by very careful laryngoscopic examination. Their course can be arrested by topical applications and cauterizations, but treatment must be commenced very early.

CHABORY. *Anæmia of Nasal Origin.*

The causes of this anæmia are: nasal obstruction, which diminishes the air supply, hæmotosis, mouth-breathing, epistaxis, mucous and muco-purulent discharges of the pituitary membrane, fever from infections and inflammations of the nasal mucosa, malignant tumours of the nose, affections of respiration, digestion, and the nervous system consecutive to nasal affections.

SENDZIAK. *The Casuistics of Naso-Pharyngeal Tumours.*

The case of a man, aged fifty-two, from whose naso-pharynx the author removed a tumour six centimètres long, five centimètres broad, and two and a half centimètres thick, typically papillomatous, with two nodules in the centre of soft fibroma. Only one similar case (Jurasz) has been described.

LACOEARRET. *Hæmatoma of the Nasal Septum.*

A little girl presented two tumours of the nasal septum after a traumatism. One month afterwards they persisted, one on each side of the septum, filling the nasal fossæ, but not communicating. Puncture emitted a rosy liquid, composed of serum, and blood discs, in process of degeneration and absorption.

WAGNIER. *Treatment of Pharyngo-Mycosis by Chromic Acid.*

Further experience (two new cases) leads the author to recommend local applications of chromic acid in rebellious cases of mycosis.

BEAUSOLEIL. *A Case of Laryngocele.*

Only Hutchinson has up to the present reported an aerial tumour of the laryngeal region, which followed upon violent coughing efforts in a phthisical patient. It consisted of a hernia of mucous membrane across the crico-thyroid space.

Beausoliel has observed a similar case at the Saint André Hospital in Bordeaux. It occurred in a man of fifty, who had had incessant cough for three years, and who at last perceived a small tumour on the side of the neck during coughing attacks. It was near the great cornu of the hyoid bone, and during coughing assumed the size of a mandarine. On compressing it, the patient became aphonic. Laryngoscopically was observed over the right ventricular band a swelling, more pronounced during phonation, suggesting eversion of the ventricle. It was a laryngocele. The author studies the pathogenesis and diagnosis.

LAVRAND. *Malformations of the Face and Obstruction of the Upper Air Passages.*

From measurements taken, the author maintains that these malformations are more apparent than real. The bones of the face and maxillary sinus are not sensibly modified in their development. The cheeks appear flattened only from absence of the ordinary muscular relief modified by lowering of the inferior maxilla. The upper dental arch and palatine vault are the only exceptions—they are retracted by the lowering of the inferior maxilla. If the respiratory passages are unaffected during youth, the malformations are corrected during the age of adolescence.

BOUFFÉ. *The Good Effects of Injections of Organic Liquids upon the Voice.*

The author says he has practised with success a great number of injections of testicular fluid upon patients with chronic bucco-pharyngeal phlegmasia of ulcerative form, which has resisted all normal treatment. He has always noted improvement of the voice, which acquires under these injections power, ampli-

tude, and exceptional brilliancy, especially in persons who make professional use of the voice.

MENDEL. *A Case of Rhino-Laryngo-Tracheal Ozena.*

There was no fœtidity or nasal or buccal respiration. There was very characteristic atrophic rhinitis of the left nasal fossa. The patient (a woman) had been aphonic for three weeks, and the larynx was covered with crusts. Under nasal douches and sprays, the laryngeal crusts disappeared, and the voice returned.

RAOULT. *Empyema of the Ethmoidal Cells.*

The case of a child of eight with a fistula of the inner angle of the left eye, near the base of the nose, and over the lachrymal sac. Drops of pus flowed from it. It had formed after an abscess resulting from scarlatina. The ethmoidal cells were curetted, and a large orifice was made in the nasal fossæ, through which the pus escaped. Cure was rapidly obtained.

JACQUIN. *A Rare Form of Mucons Plaques of the Vocal Cords.*

GUILLAUME. *Foreign Body of the Air-Passages.*

A child, five years of age, swallowed a glass tube. The fragments penetrated the bronchi, and provoked broncho-pneumonia. Tracheotomy was followed by death.

VERGNIAUD. *Chronic Catarrhal Rhinitis of the Olfactory Region. Inflammation of the Sphenoidal Sinus and Posterior Ethmoidal Cells.*

The title indicates the nature of the case, which is reported in detail in "Rev. Mens. de Laryngol.," Sept., 1894.

HAMON DU FOUGERAY. *Rules to be followed in Opening Mastoid Abscess.*

In operations upon the mastoid apophysis, even the most simple, it is necessary in exploring the cavities to always have in mind the exact anatomical position of the sinus. Exploration should always be directed towards the mastoid antrum and forwards, whereby wounding of the sinus is impossible. It ought to be as much tangent as possible to the external lamina of the apophysis, and not directed in a transverse manner.

MOUNIER. *Abscess of the Lingual Tonsil.*

From two cases related, the author thinks that abscess of the lingual tonsil may pass unperceived by reason of its slight gravity and the slight inflammatory appearances in the pharynx, to which may easily be attributed all the symptoms. Prognosis ought, however, to be guarded, having regard to the proximity to the larynx and possible œdema glottis. In case of respiratory trouble the abscess ought to be largely opened with the galvano-cautery.

BELLIARD. *Cold Retro-Pharyngeal Abscess.*

Referring to a case recently observed and successfully treated, the author thinks that opening of the abscess through the mouth is preferable to evacuation by cutaneous incision. The bistoury should be directed towards the median line of the pharynx to avoid hæmorrhage; the pus has no tendency to pass into the air passages; it is oftenest rejected through the mouth.

MOLINÉ. *The Use of Lamina of Celluloid in the Treatment of Synechiæ of the Nasal Fossæ.*

Cotton wads have often to be renewed, and the same with iodoform tampons, which the patient may reject in blowing the nose. Cardboard, as devised by

Schmidtz, rapidly becomes foetid. Tin or ivory is preferable, but celluloid, as used by Garel, is better. In numerous cases seen by the author success has been complete.

LUBET-BARBON and MARTIN. *Treatment of Mastoid Suppuration*

Mastoiditis is the common accompaniment of otitis. Air douche is preferable to irrigating the tympanum through the Eustachian tube. When there is mastoiditis continuous applications of ice should be used; leeches may be serviceable. If the inflammation does not now subside, trephining should be resorted to. Wilde's incision is without advantage, amelioration is only temporary, and mastoiditis reappears. When trephining is determined upon it should be over the antrum, into which all other cells open, and the position of which is the least variable. Opening of the middle cerebral fossa, wounding of the facial or of the transverse semicircular canal, or of the lateral sinus, can be avoided. In the *spina supra meatum* trephining ought to be done with the chisel and mallet. When the antrum is open it should be cleared by curetting. In case of abscess an incision is made over the retro-auricular suture, and the periosteum sought for with the nail or stylet, and the diseased portion removed. In acute otitis it is useless to proceed from the antrum to the tympanum; in chronic inflammation of the tympanum it is necessary to clean this. The orifice of the aditus is sought for, and a stylet is introduced into the tympanum, and is separated from the exterior by the external wall of the canal of the antrum. A passage is cut down upon the stylet with gouge and mallet from without inwards.

Mastoid abscess left to itself, and not evacuated by the aditus, breaks the osseous wall surrounding it and evacuates externally on the apophysis. It may open into the middle cerebral fossa or lateral sinus, or burrow through the muscles into the neck, pharynx, or thorax. It may perforate the cortex, which is frequent, and evacuate rapidly and completely by a large loss of osseous substance, and in such cases Wilde's incision is beneficial. When mastoid fistula exists the osseous cavity should be largely opened. Blind curettage may break the protecting bony lamella, displace a sequestrum, paralyse the facial, produce hæmorrhage or perforation of the cranium. The fistula should be laid open by removing the osseous substance covering the track.

RAUGÉ. Excessive fear of operation leads to fatal abstention. Many patients die who ought to be operated upon. By carefully proceeding, layer by layer, using the curette more than the chisel, and the chisel more than the trephine, the risks of operation are diminished. There are frequent anomalies and irregular anatomical dispositions in the position of the sinus and thickness of the cell layer, which make the operation difficult, but it only needs care in proceeding to overcome these.

MOURE. Stacke's operation is good, putting the tympanum bare with smooth walls easy to clean, but great loss of bony substance results, which is difficult to repair. Agreeing that operation is very essential in many cases, it is not necessary in simple otorrhœas as many foreign specialists think.

LUBET-BARBON. The variable situation of the sinus constitutes the danger in this operation, but if the antrum is found, we can be sure that the sinus in front of this cell is separated at least by the thickness of the antral wall. Treatment after Stacke's operation lasts a variable time. If done in caries of the tympanum, cure results in a month, if for cholesteatoma suppuration may last for several months.

MIOT. — *On the Mobilisation of the Stapes.*

The formal indications for this operation are as follows: The tuning-fork, Nos. 3 or 4, placed on the middle line of the skull, is heard better in the deaf ear; placed

opposite the meatus of the ear in question the tuning-fork is not heard at all. The patient suffers from continuous roaring in the ear, sometimes from vertigo. The membrane is often distinctly thickened. The deafness may be variable. The mobilization of the stapes modifies certain pathological conditions, which resist every other treatment; with careful asepsis the operation is uncomplicated.

LABIT. *Ménière's Vertigo.*

This affection arises generally from sudden exudation or hæmorrhage of the labyrinth, and the author has thought that the benefits of subcutaneous injections of pilocarpine, seen in pleuritic or pleural effusion, may be extended to this affection. He quotes three cases of Ménière's vertigo successfully treated by this means.

LUC. *Large Openings of the Cavity of the Middle Ear as a Medical Treatment of Certain Rebellious Otorrhæas.*

From six cases of rebellious suppuration of the middle ear, treated in this manner, the author concludes that all suppuration, a little old, of the attic, indicates almost certainly the existence of a simultaneous lesion of the antrum, and the latter cavity ought to be opened. Of his six cases only one had facial paralysis consecutive to the operation.

THOMAS. *Note on the Treatment of Internal Otitis.*

The author believes in the preponderating rôle of syphilis in unilateral or double labyrinthitis. Anti-syphilitic treatment is therefore indicated. He relates two cases in which this has been successful.

GELLÉ. *Auricular Inhibitions.*

Dr. Gellé recalls the evident power of excitation of the acoustic nerve (music, rhythm, cadence, etc.); from this he deduces a comparable inhibitory action; he shows it in the physiological exercise of hearing, and he demonstrates the action on movements, sentiments, and the intellect in pathological cases. The subject naturally divides itself into general inhibitions of auditory origin, and auditory inhibitions of general origin. To this he adds the inhibitory action of one ear on the other, and gives a series of examples of each kind. In the test of hearing by two successive sounds, the first violent, the second following immediately, but feeble, although perceptible by the subject, Dr. Gellé shows that there is an interval sometimes quite considerable between the first and the second perception, and he does not think that this shows an effect of fatigue, but rather an act of inhibition.

WEISSMANN. Some points of treatment consecutive to Stacke's operation.

BERLIN LARYNGOLOGICAL SOCIETY.

Meeting, April 27th, 1894.

Reported by Dr. EDMUND MEYER.

SCHADEWALDT demonstrated a patient in whom some time ago (see meeting of February) two tubercular ulcers had been cured by the rubbing in of creolin. A recent ulcer on the right false cord also had been healed after rubbing creolin.

A. ROSENBERG held that the ulcer was not healed, as granulations were present, but no cicatrix.

LUBLINSKI did not believe that the cure resulted from the creolin treatment, because lenticular ulcers of the false cords healed without any treatment.

LUBLINSKI showed a papilloma from the arcus pharyngo-palatinus, and one from the posterior surface of the base of the uvula.

ALEXANDER showed a patient with otitis media, resulting from sniffing water up the nose.

ROSENBERG showed a patient with ozæna, in whom the entrance to the sphenoidal sinus could be seen by anterior rhinoscopy.

HERZFELD was not convinced that it was really the entrance to the sphenoidal sinus that one saw.

LANDGRAF showed the microscopic sections of a pachydermia verrucosa of the posterior wall of the larynx, which had appeared in the laryngoscopic picture as a circumscribed red thickening.

KATZENSTEIN: Further communication on the innervation of cricothyroid muscle. (See "Virchow's Archiv," Band 136, Heft 1.)

Meeting, June 8th, 1894.

LANDGRAF informed the Society of the formation of a South-German Laryngological Society.

FLATAU showed (1) a young girl with empyema and caries of the sphenoidal sinus and disease of the ethmoid cells, which presented the appearance of a rhinitis acuta foetida, and was cured by treatment of the empyema. (2) A sixty-year-old woman, who had been treated for nasal polypi fourteen years ago. For three years—following influenza—headache and attacks of giddiness. Examination four months ago showed bilateral disease of the ethmoid cells, and empyema of the left sphenoidal sinus. Improvement in the symptoms had followed removal of the middle turbinated. (3) Demonstration of a modified Grünwald's forceps for resection of the anterior wall of the sphenoidal sinus.

HERZFELD showed a boy, five years old, with multiple xanthoma of skin, pharynx, and tongue.

ROSENBERG demonstrated (1) a spray for oily substances. (2) A man, twenty-six years old, with a subglottic membrane between the vocal cords, at the anterior end, probably congenital. (3) The drawing of the larynx of a twelve-year-old boy, with double congenital membranes, one between the epiglottis and ary-epiglottic folds, occupying the half of the glottis; the second between the vocal cords reaching farther back.

SCHEINMANN reported that the child he had shown at the February meeting with sarcoma of the naso-pharynx had died, and the *post-mortem* had confirmed the diagnosis.

FLATAU reported that his patient, shown at the same meeting, with epithelioma of the nasal mucous membrane, had returned with a recurrent growth, which could not be operated on.

DEMME brought forward a boy with an affection of the palate, tongue, and lips, which he considered was acute pemphigus.

SCHÖTZ and LANDGRAF could not agree with the diagnosis, but thought it was aphthæ or foot and mouth disease. Pemphigus presented large blisters and pieces of epithelium peeling off, under which there appeared always a bleeding mucous membrane.

UNSHELEN demonstrated in Heymann's department (1) a patient with papilloma of the point of the uvula; (2) a case of fracture of the larynx consequent on a fall on the axle of a carriage.

DISCUSSION ON HERZFELD'S PAPER ON EMPYEMA OF THE SPHENOIDAL SINUS.

FLATAU had seen twenty-six cases of empyema of the sphenoidal sinus in two years. Only once had he seen it in connection with ozæna. Polypi seldom accompany it, but are more frequent when the ethmoid cells are affected. Perforation and formation of fistula are rare; still, without perforation, meningitis and sinus thrombosis can arise. In one case death occurred, with symptoms of meningitis, two days after the operation for empyema of the sphenoidal sinus. The author supposed that the meningitis was already there (latent), and only became manifest after the operation. Complications with disease of the other nasal sinuses, especially of the posterior ethmoidal cells, was common. The etiology was in many cases doubtful; in others the empyema followed the acute fevers such as typhoid, influenza, erysipelas, and scarlatina.

ROSENBERG: In most cases the etiology remained doubtful. In some cases ozæna seemed to be the cause, but never syphilis or scrofula. Polypi were rather rare, and the secondary polypi mostly small. The ages of the patients varied from nineteen to thirty-five years. The distance from the spina nasalis anterior to the anterior wall of the sphenoidal sinus was from 6 to 7.5 centimètres (average 6.8 centimètres), and to the posterior wall of same from 7 to 10 centimètres (average 8.5 centimètres). The amount of space on the two sides could vary greatly—for example, the septum could be so twisted that a probe passed through the right side of the nose entered the left sinus. (Demonstration.) Subjective sensations of the patient were burning in nose, pain at root of nose, over the eye, and in the temporal region, shooting pains in the head, and a feeling of stuffiness. The swelling of the septum at the level of the anterior wall of the sphenoidal sinus, described by Herzfeld, had only once been observed by the speaker. In one case with severe pain in the head no pus was to be seen, but, after removal of the hypertrophied middle turbinated, pus flowed down from above it, and the pain in the head immediately disappeared.

SCHWABACH agreed, with regard to the etiology, with Rosenberg—in many cases it was quite unknown. The speaker described the following case. The patient, a man of eighteen years, was brought into hospital with symptoms of septicæmia. Eight days before that, he was said to have had a pneumonia and an otitis media suppurativa. Examination in hospital showed infiltration of the lower lobe of the left lung: otitis media sinistra e perforatione membranæ tympani, and otitis media

dextra incipiens. The *post-mortem* showed aspiration pneumonia (left), thrombosis of the left popliteal artery, embolus of the left pulmonary artery, pus in the tympanum, in the antrum mastoideum, in the antrum of Highmore, and in the sphenoidal sinus. In the pus was a pure cultivation of streptococcus. Schwabach held the otitis to be primary and the cause of the rest, as he maintains that a septicæmia may arise from an otitis media, even without any sinus thrombosis. In a second case, brought into hospital comatose, and who died in two hours, the *post-mortem* showed meningitis suppurativa, and empyema of all the accessory sinuses except the frontal. No caries. The speaker considered the disease of the accessory sinuses primary.

SCHIEINMANN remarked on the difficulty of diagnosis. The symptomatology was not yet sufficiently clear. He demanded that the flow of pus from the sinus should actually be seen. The etiology also was generally uncertain.

SCHÖTZ agreed with the last speaker.

HERZFELD remarked that Michel first drew attention to disease of the accessory sinuses in ozæna. He himself had never seen cure of ozæna, but had seen great improvement following the treatment of the accessory sinuses in cases of ozæna. He had seen the swelling, that he described, five times in six cases. Lastly, he demonstrated a sphenoidal bone that was completely solid, possessing no sinus.

Meeting, July 6th, 1894.

TREITEL demonstrated a case of primary lupus of the soft palate, in which three years ago glands in the neck, and two years ago adenoid vegetations had been removed. The development on the palate, uvula, left lateral fold, and left tonsil followed within a year. Contrary to Fraenkel, who would rather regard the case as tuberculous, because there were no nodules visible, Treitel asserted that he had seen nodules.

FLATAU reported a case in which repeated attempts to close a defect in the soft palate, resulting from syphilis, had been quite useless, but the perforation caused no disturbance.

FRAENKEL pointed out that perforations situated below the swelling formed by the constrictor pharyngis and levator veli palati, even when of considerable size, remained without symptoms, whilst quite small defects above this line caused disturbances. It was impossible to say when staphylorrhaphy was likely to cure.

TREITEL reported another case of perforation in the same position, which had been cured by a course at Aix.

DEMME presented a child with large ulcerations before and behind the ear, and at the angle of the eye; the left side of the nose filled with secretion and bleeding granulations; on the hard palate a crater-shaped ulcer, which had started three weeks ago, and grown rapidly. He considered the ulcers were due to lupus; tubercle bacilli had not been discovered.

HERZFELD had seen the child about three weeks ago. At that time a painless swelling arose on the hard palate, which broke down after two or

three days. He considered that the method of origin was characteristic of syphilis.

FRAENKEL pointed to the necrosis of the superior maxilla as being in favour of syphilis.

DEMME considered the flabby, easily-bleeding granulations undoubtedly lupous.

SCHEINMANN demonstrated a trephine for the antrum of Highmore.

FLATAU preferred hammer and chisel for opening the antrum.

HERZFELD preferred to use the dental drill, but in opening through the canine fossa used hammer and chisel.

HEYMANN demonstrated specimens from a case, shown last year, in which diagnosis was not certain as between lupus and syphilis. Patient died of meningitis tuberculosa. *Post-mortem* showed syphilis of the larynx; cicatrices in the lungs probably syphilitic, and tuberculosis of the tongue.

REVIEWS.

Schmidt, Prof. Moritz.—*Die Krankheiten der oberen Luftwege.* ("Diseases of the Upper Air Tracts.") With 132 figures in the text, and 7 plates. Berlin: Julius Springer, 1894.

IN this handsome and closely-printed volume of over seven hundred pages we have a succinct account of rhinology and laryngology based on the author's large experience, extending over a period of upwards of thirty years. The book is primarily intended for the general practitioner, whom the author reproaches for his lack of interest in the specialties, and for his readiness to regard patients' complaints as "nervous." He thinks that the practitioner should master the special diagnosis at least sufficiently to prevent his treating a patient with a laryngeal growth, or antral suppuration, by sending him to a health resort.

The most striking feature of the work is the arrangement of the matter. Instead of following the plan hitherto adopted of grouping together the diseases of the different regions, the author has taken each affection and followed it throughout the whole upper air tract. In this way a more complete picture of the disease is presented, and repetition is avoided. The artificial classification to which we have been accustomed will always be welcome, however, when there is a difficulty in diagnosis.

In the chapter on anatomy, each fact is made the basis of remarks, which are of great practical importance. The relations of the tonsils to the large vessels of the neck are clearly described and figured. The origin of the pulsation on the posterior wall of the pharynx is also discussed. The chief feature of this chapter is the unusually full description of the innervation of the upper respiratory tract.

A section on embryology follows. In addition to hare-lip, cleft-palate, tracheocele, &c., reference is made to various uncommon rhinoscopic and

laryngoscopic appearances resulting from imperfect development, which, although of but slight significance practically, it is well to understand.

The author considers that during deglutition it is not at all necessary that the epiglottis cover the entrance to the larynx like a lid. In his opinion the chief closure of the larynx is effected by the false cords, and strengthened by the petiolus epiglottidis being pressed upon them from before. Further, he thinks it possible that contraction of the inter-arytenoidei obliqui, which brings together the upper ends of the arytenoids, will cause the approximation of the false cords rather than of the true. A space will thus be left between the latter, which will permit air to pass from below up into the ventricles of Morgagni, distend them, and so increase the closure.

In chapter 3, under the head of "General Considerations," the author discusses certain general conditions which give rise to symptoms in the throat and nose. This section is of special value as the author was engaged in general practice for twenty-six years. The first condition described is intestinal tympanitis or plethora abdominalis. He attributes it to the use of too much fluid at meal-time, and to over-feeding. The liver is pushed backwards and its area of dulness diminished. The capacity of the thorax is lessened, and the circulation impeded, this being the more marked the stronger the abdominal muscles. The blood is forced upwards in the body. The appetite is good, the bowels are regular. For this condition he recommends the separation of fluid from solid food, and as limited a use of the former as possible.

Tight collars may also cause vascular engorgement of the upper respiratory tract. The author has had two cases of severe hæmorrhage after curetting the larynx in which styptics failed, the bleeding only ceasing on loosening the collar.

Anæmia, diabetes, heart affections, hysteria, neurasthenia, etc., are all duly considered in relation to throat affections.

This chapter closes with some remarks of a more general character. In the author's opinion a specialist should not be prevented, but rather compelled, for some time at least, to engage in general practice. The relations of the specialist with the general practitioner are briefly discussed. Hints are given regarding the management of hypochondriacs and children. Finally, the author pleads that we furnish the patient with precise directions, for, if the measures prescribed fail to benefit in consequence of being perfunctorily performed, the patient never thinks that he himself is to blame.

Reference is made to Avellis's method of examining the parts in the neighbourhood of the ventricles of Morgagni, or the vocal cords when there is swelling of the false cords. The method is not well known, and is carried out as follows: To examine the right vocal cord the patient bends his head to the left, and the mirror is placed on the left side of the uvula. The author mentions that he now succeeds in seeing the vocal cords at the first examination without cocaine, in all cases with the exception of one in about five thousand.

A cocaine spray of one in one thousand is recommended to produce collapse of the inferior turbinates. To introduce cocaine and other

liquids into the larynx the author prefers a syringe. He remarks that the passing of instruments into the larynx sometimes appears to interrupt the action of the cocaine. To produce anæsthesia in the naso-pharynx and trachea he insufflates the cocaine in powder, four parts to one of sugar or talc.

The author strongly favours the insufflation of powders as a method of treatment, more especially in laryngeal affections, for he believes that the brush almost never touches the cords without preliminary cocainization.

The chapter on "Chronic Catarrh" is the best and most practical we have ever read. The author looks upon atrophic rhinitis as a result of hypertrophic rhinitis, although he does not remember having observed such a transition in any of his cases—indeed, so far as we are aware, there is only a single case of the kind on record, and the child suffered from hereditary syphilis. The author's opinion appears to be based on the fact that not uncommonly the anterior part of an inferior turbinate is atrophied, while the posterior part is hypertrophied. This view, as hitherto presented, has always struck us as unsatisfactory. Gerber's recent researches ("Spätformen Hereditärer Syphilis," 1894) have shed a fresh light on the question, however, and the above theory seems to come nearer the truth, if we regard atrophic rhinitis as a late manifestation of hereditary syphilis, and look upon the coryza neonatorum as the hypertrophic stage.

Considerable weight is attached to the various forms of catarrh in the naso-pharynx. A hypertrophic variety is described which leads to thickening of the Eustachian cushion, narrowing of the Eustachian orifice, and inflammation in Rosenmüller's fossa. The patients complain of very troublesome tinnitus, and they hear as if through a veil. The characteristic feature, however, is that whispering is well heard, but the watch badly. Owing to the apparent absence of pathological changes in the ear, the condition is frequently diagnosed as nervous. The Eustachian orifice regains its normal width by treating the cushion and the fossa with *lapis mitigatus*.

When there is catarrh of the recesses in the naso-pharynx, the discharge may appear on the posterior wall of the oro-pharynx as a thin, dry layer, which gives the mucous membrane an atrophied aspect. If the thin coating be removed, however, the underlying mucosa is found to be normal, or even thickened; further, the author has frequently succeeded in restoring the mucous membrane to its normal appearance in even the most pronounced cases of naso-pharyngitis sicca. On these grounds he holds that there is no destruction of the mucous glands, and that the condition is due to the presence of a drying agent (*Sikkatif*). True atrophy is exceedingly rare either in the pharynx or naso-pharynx excepting in advanced life.

Pharyngitis sicca, not due to rhinitis sicca, can, as a rule, be improved or removed only by treating the pharyngeal tonsil.

Treatment of the granules on the posterior wall of the pharynx may usually be disregarded, as they merely mark an extension of the naso-pharyngeal disease, and in themselves rarely produce discomfort.

Pachydermia laryngis also is looked upon by the author as nearly

always due to naso-pharyngitis sicca, being caused by violent hawking. Laryngitis hæmorrhagica is produced similarly.

Trichloracetic acid is recommended as a caustic in preference to chromic acid. The beneficial effect of linear galvano-cauterizations of the inferior turbinate was formerly found in many cases to be transient ; the author is, therefore, in the habit of applying one of the above-mentioned chemical caustics to the wounds produced by the galvano-cautery, in order to obtain a permanent result.

A chapter is devoted to the "Affections of the Four Tonsils." Hypertrophy of the pharyngeal tonsil is commoner, in the author's opinion, in the dolicho-cephalic than in the other types of skull. The dolicho-cephalic Anglo-Saxon race appears to be particularly predisposed to this condition, and the author suggests that the characteristic prominence of the incisors and the pinched nose of the English may depend on the more frequent presence of an enlarged tonsil.

For the removal of the faucial tonsils the galvano-caustic snare is strongly advocated, while cutting tonsillotomes are condemned. At one time the author used the latter, but after having had profuse hæmorrhage in five cases, and having had one of his own tonsils removed with the galvano-caustic snare, he abandoned the cutting instruments and has used the snare exclusively since with great satisfaction. He has had only one severe hæmorrhage since adopting this method ; the patient was an adult and was still suffering from a recent angina.

Tonsils may be removed by this method without the loss of a drop of blood, but the necessity of administering a general anæsthetic is a great objection. The mode of procedure is described in detail ; the operation with cutting instruments is dismissed in a few lines. The author's experiences with the tonsillotome must have been particularly unfortunate and his dread of hæmorrhage great, for he was in the habit of supplying each patient after the operation with a bottle of liq. ferri sesquichlor.

The chapter headed "Purulent Inflammations" includes blennorrhœa, submucous inflammation, perichondritis, and the affections of the accessory cavities of the nose.

The last-mentioned section opens with a list of the names of those who have contributed to the advancement of this subject. They are all Germans or Austrians. Now, while admitting that Ziem's paper, published in 1886, was undoubtedly the means of directing attention to these diseases, he was not the first—as his Continental colleagues usually hold him to be—to point out that form of antral suppuration in which the pus escapes freely through the ostium. This condition was clearly described by Spencer Watson in 1875, by Lennox Browne in 1879, by Heath in 1884, and by Lefferts in 1885.

The author divides empyemas of the accessory cavities into those which discharge (*Empyeme aperte*) and those which are quiescent (*Empyeme latente*). Empyema with closure of the natural orifice is here left out of account. The use of the term "latent" in the above sense will probably lead to confusion, for since the publication of Jeanty's thesis it has been employed to designate those cases of empyema of the antrum in which the sole symptom is the purulent discharge.

An excellent systematic method of differentiating suppuration in the various cavities is detailed.

In writing the chapter which deals with the affections of the upper air tract resulting from chronic or acute infective diseases, the author's experience in general practice has proved invaluable.

His observations do not permit him to recognize a phthisical catarrh. A consumptive patient, naturally, may suffer from acute or chronic laryngeal catarrh, but this presents nothing characteristic. What is commonly termed catarrh in those suffering from phthisis is, in his opinion, always an infiltration, the expression of a tubercular infection. This view is confirmed by the results of injections of tuberculin, the so-called catarrhal areas becoming red and swollen.

To Prof. Schmidt we are indebted for introducing the surgical treatment of laryngeal phthisis—although he modestly refrains from reminding us of the fact—and we turn with interest to the portion of his work bearing on this subject. During the last five years he has treated by the surgical method one hundred and seventy-nine patients on an average annually, and at the end of each year he had cured the larynx in thirty-four (eighteen per cent.) on an average.

The method of using the simple and double curette is carefully explained. When the infiltrations are extensive he recommends their removal, or that incisions be made into the swollen parts either with a knife or with a special pair of scissors designed by himself. Thus, for infiltrations of the posterior wall, he introduces one blade of the scissors into the larynx, and the other into the œsophagus, and cuts boldly through at the place where the swelling is greatest. An infiltrated epiglottis may be treated similarly. A solution of lactic acid (fifty per cent.) is rubbed into the wounds.

Tuberculin is regarded with favour by the author. By means of it he has cured several cases. The difficulty lies in regulating the dose.

In the course of a very interesting account of syphilis, the author mentions that a prominent ridge may be seen running obliquely downwards and backwards over tonsils that have been affected with secondary ulceration. He states, however, that this peculiarity may occur, but much less frequently, in tonsils which have not been syphilitic. We had occasion recently to carefully examine the tonsils in a large number of cases, and in the majority of these a ridge, corresponding with that described by the author, was noted, although in nearly all syphilis could be excluded.

The author pays no special heed to the mucous membrane before operating with the saw or chisel on the nasal septum. At one time he was in the habit of preserving it, but he found that occasionally a thickening resulted which required to be destroyed with the cautery. In operating on a deviated septum he has no fear of making a perforation. Sinking in of the nasal bridge is a consequence of cicatricial contraction, and is not due to the removal of so insignificant a support.

In order to gain an idea of the frequency with which neoplasms occur in the upper air tracts, the author presents a statement of the cases he has had during the last ten years. The total number of patients examined

was 32,997. In the nose : mucous polypi 757, fibromas 2, papillomas 6, lymphoma 1, lympho-sarcomas 2, cyst 1, sarcomas 6, carcinomas 5. In the larynx : fibromas 256, papillomas 46, singers' nodules 109, lipoma 1, myxomas 3, fibro-myxoma 1, tubercular tumours 56, cysts 8, sarcomas 3, carcinomas 75. Cases in which the growths occurred in the naso-pharynx, mouth, and trachea are also enumerated.

Reflex affections are described in the chapter headed "Remote Effects" (*Fernwirkungen*). The latter term is preferred, because some of the conditions here alluded to owe their origin to mechanical causes. In treating this subject the sensational is avoided. The author has noticed a peculiar coincidence in at least ten cases, viz., that children who in their first or second year had suffered from strophulus, became affected in after life with asthma.

In the chapter on "Hæmorrhages" mention is made of a very bad form occurring in liver affections, especially in cirrhosis. The author has noticed that in these cases the bleeding frequently takes place from dilated veins in the posterior part of the nose.

"Spitting of blood" is often caused by diseased teeth. Many patients are unaware that they suck their teeth during the night. If granulations are present, or if the gum is inflamed, the blood drawn from these parts during sleep not uncommonly passes into the lower part of the throat, and is coughed up in the morning.

While discussing the medical treatment of the singing voice the author avoids controversial topics, and keeps to matters of practical interest. In deciding as to whether a patient should be allowed to sing he remarks that in singing pupils, even a slight redness of the vocal cords, from whatever cause, which is not considerably improved after a short course of treatment, demands that singing be abandoned ; if the vocal cords are not red, permission will depend upon the cause. He has always allowed trained artistes to appear for one evening, in cases of necessity, when the vocal cords were white. Singing while the vocal cords are red should be absolutely forbidden, excepting in the few cases in which the condition is physiological.

The book closes with excellent chapters on the Diseases of the Thyroid Gland and Œsophagus.

In such a large work a few misprints could hardly fail to escape correction, *e.g.*, p. 161, *Anosima*, p. 270 and elsewhere, *uncinnatus*, p. 310, *Aufschüttes*, p. 322, *gerabeitete*, p. 446, *vollständige*, p. 640, *Strammonium*. In the matter of proper names he has occasionally been unfortunate. Thus we find on p. 247, *Scane Spicer*, and *Gouggenheim and Tisier*, p. 270, *Kauffmann*, p. 493, *Störck*, p. 526, *Fänkel*, p. 625, *Mayor*, p. 685, *Zaufall*.

The author is to be congratulated on having written an interesting and eminently practical work. He has avoided elaborate classifications, and the introduction of literary references. His critical remarks on present day questions and recently advocated methods of treatment are of particular interest to the specialist. Instead of describing a great number of therapeutic procedures of doubtful value, he has given us only a few, but these are trustworthy. He took as his motto, "*Aus der Praxis für die Praxis*," and he has stuck to it well.

A. Brown Kelly.

Gouguenheim and Glover.—*Atlas of Laryngology and Rhinology.* By A. GOUGUENHEIM and J. GLOVER. With thirty-seven Plates, in black and in colours, comprising two hundred and forty-six Figures, and with forty-seven Figures in the Text. Paris: G. Masson. 1894.

THIS work, which may truly be described as a colossal undertaking—it cost its authors three years of work—opens with an excellent chapter devoted to topographical anatomy in relation to endo-laryngeal, endonasal and rhino-pharyngeal surgery, which is followed by a description of the *technique* of laryngoscopy and rhinoscopy, and, after some dozen pages devoted to this very useful introduction, the authors enter upon the chief part of their task by the consideration of diseases of the pharynx and larynx, and the operative surgery of the throat and nose, which is as complete as need be, bearing in mind that it forms the comparatively brief immediate introduction to the study of the plates.

In the section devoted to “diseases of the pharynx” we notice the following remark: “After acute pharyngitis it is possible, especially in diphtheria, to observe serious affections of motility of the palatine vault,” from which we are glad to see that the authors admit the occurrence of palatine paralyses after other than diphtheritic inflammation—a phenomenon which we have ourselves many times observed.

We cannot, however, agree with the following statement, as to “phlegmonous amygdalites”: “Although the peri-amygdalar tissue has been suspected to be the origin of these tumours, we are convinced that the crypts and tonsillar follicles are rather the primary seat of the affection than the peri-tonsillar tissue.”

A fair exposition of the common forms of benign tumours and paralyses of the larynx follows, and as to the latter the authors refer to the question of paralysis of the dilators or spasm of the adductors as still undetermined. The condition has nearly always been observed by them in tubercular subjects.

Tuberculosis of the larynx is fully dealt with, and we completely endorse the truth of the following remark: “When we meet, in a patient who coughs and is wasting, even when the pulmonary lesions are very discrete and difficult to recognize, with pallor of the arch of the palate and coincident tumefaction of the arytenoid region, pale or of deep colour, we may be assured without fear of error that tuberculosis is the cause.” Other forms of early tuberculosis are described, viz., aryteno-epiglottitis, stenosis of the vocal cords (crico-arytenoid arthritis), perichondritis, early lesions of the vocal cords, tubercular tumours and pachydermia.

Six early forms of intrinsic cancer of the larynx are described, with points as to diagnosis, but no mention is made of nerve affections of the cords. It is remarked that, in the diagnosis of intrinsic cancer, tertiary syphilis is the affection with which it is most likely to be confused, and it is only possible to make a diagnosis by the microscope. We certainly think that if differential diagnosis were to be discussed, the early neuro-pathic affection of the cords ought to have been dwelt upon. No mention is made of subglottic cancer.

Syphilis of the pharynx and larynx is next dealt with, and then

follows the consideration of diseases of the nose, which are but briefly reviewed. About thirteen pages follow, devoted to the pathological anatomy of the larynx, pharynx, and nose. In connection with this chapter are four large plates illustrating microscopic sections, which we consider the weakest part of the whole work ; scarcely any of the figures are distinctive, and the two plates devoted to coloured reproductions of micro-photographs would have been better omitted from the work altogether. The production of such illustrations is one of the most difficult of printing accomplishments, and they need to be of a very high degree of excellence to be worth anything. All of the other large plates (of which there are thirty-five in all) are executed in an exceedingly good manner. These form the great bulk of the work, and illustrate all the commoner forms of diseases of the larynx, pharynx, and nose, topographical anatomy, and external and internal surgery, and form a very complete atlas, which cannot fail to be of immense benefit to its possessor. We cannot, in the short space of a review, enter into a full consideration of this large work. We have felt bound to offer a few criticisms in the hope that, when a second edition is called for, certain defects may be remedied : but on the whole we have nothing but praise for the book, which must have entailed immense labour upon its authors. It is one of the best atlases we have seen, and should undoubtedly be possessed by every specialist. Its great merit is, that from end to end it is original in its matter, and not a reproduction from other preceding works of the kind. As the authors say in their preface, the text preceding the plates is not a treatise, but a commentary upon the figures of the plates, and the description of the plates has been printed in parallel columns in English and French. We congratulate the authors upon the result of their great undertaking.

R. Norris Wolfenden.

Hall. — *Diseases of the Nose and Throat.* By F. DE HAVILLAND HALL, M.D., F.R.C.P. London: H. K. Lewis. 1894.

THE author excuses himself for having added another book to the long list of those dealing with diseases of the nose and throat, because he knows of no work of moderate size which gives anything like a complete account of them. It is only fair to Dr. de Havilland Hall to say that in many respects he has been successful in accomplishing his object. The affections common to the nose, accessory sinuses, naso-pharynx, pharynx, and larynx are well arranged, the descriptions are for the most part accurate and concise, and the treatment, judged from the physician's standpoint at least, is practical. Altogether, the author is to be congratulated upon having produced a work which will take a good place as one of an admirable series.

It would be unfair not to point out what is a great defect in a work of this kind, viz., the surgical aspect of treatment. A student or practitioner becoming possessed of such a work is entitled to have the best methods of treatment placed before him. If we reflect for a moment upon the vast number of operations required in treatment of diseases of the upper respiratory tract, the importance of surgical treatment at once becomes apparent. The author is evidently aware of this, because he explains

that the book is written by a physician, and not by a surgeon. In future editions the surgery of the question could be very much improved, and to a certain extent the same remark might be made about his treatment of etiological questions.

Dr. de Havilland Hall will perhaps excuse us referring to one thing. He states in the preface that he has made free use of the "Centralblatt für Laryngologie und Rhinologie," but a reference to the pages of his work will show that he has also made free use of the JOURNAL OF LARYNGOLOGY. Of course this has nothing whatever to do with the merit of the work in question, but a comparison of the number of references taken from both works would, we think, justify us in making this observation.

J. Macintyre.

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**ADENOIDS, with a Description of NEW INSTRUMENTS
for their TREATMENT.**

By ARTHUR G. HOBBS, Atlanta, Ga.,

Ex-President of the American Rhinological Association ; Member of the
American, and the Georgia State Medical Associations, and of
the Tri-State Medical Society, the Atlanta Academy of
Medicine, etc., etc.

A POST-PHARYNGEAL adenoid is as truly an overgrowth of Luschka's tonsil as is a wart an overgrowth of a papilla of the epidermis. The two differ in all respects only as the corium of the skin differs from the lymphoid cushion in the pharynx, whence each has its respective origin. The resemblance between them may be seen in the different degrees of consistency that each presents, due in both cases to the rapidity of growth, the age, and the peculiar condition of irritation to which either may have been subjected. The vegetations are found between and just posterior to the orifices of the Eustachian tubes, they rarely push forward enough to encroach upon the choanæ and enter the orifices. When felt with the finger, introduced through the pharynx, as well as when seen with a posterior rhinoscopic mirror, the mass resembles brain tissue in its consistency and in its furrowed surface. While it is a so-called hypertrophy, it is but little like the hypertrophies that we encounter elsewhere, except in long existing cases, and in older subjects than it is ordinarily found. In such cases the growth is comparatively small, and does not obstruct breathing to any great extent, although it may decidedly

alter phonation and cause a dead or muffled voice tone. By common consent another name is usually applied to this particular condition, viz., hypertrophy of the pharyngeal, third, or Luschka's tonsil. This is, however, a distinction without a real difference. It is this form of adenoid growth that in so many ways resembles a verruca.

Nothing is definitely known as to the cause of adenoid growths, unless an hereditary tendency, as a predisposing cause, together with often-recurring colds as the excitant, can be regarded as a satisfactory etiology. They occur much more frequently in children, and often in such cases disappear spontaneously when the subject has nearly or quite reached maturity, ; still, it is not a rare occurrence to find them in young adults, or even in those who have reached middle age.

The diagnosis is easy—indeed, by exclusion the nature of the growth and character can always be reached. Digital examination is the surest means in all cases, but particularly so in children where posterior rhinoscopy is often impossible. The finger finds a mass in the superior pharynx that is yielding and gelatinous, with a furrowed surface that imparts somewhat of a wormy feeling, except in older subjects where the growth has undergone fibrous changes, when the finger detects considerable hardness.

Posterior rhinoscopic examinations will often reveal the condition in this post-palate space perfectly, but it can rarely be successfully used with young children. Anterior rhinoscopy will occasionally reveal the growth, but, as a rule, the turgescence of the inferior turbinates, which exists as one of the many sequelæ, will obstruct the view through the nose. The diagnosis is, however, usually so easy, when we consider the age of the patient, the deafness, the open mouth, the vacant expression of the face, the retarded chest development, the small alæ, the inability to blow the nose, together with the history of snoring or difficult sleep-breathing, that a further examination, by touch or vision, is necessary only to confirm an opinion already formed, and to discover the extent, the situation of the vegetations, and the probable sequelæ. An examination by sight or touch may be necessary to exclude polypi, which are mostly confined to adults ; or post-nasal abscesses, not often seen in children ; or bony growths, rarely found at this time of life ; or foreign bodies, such as buttons, beans, etc., thrust into the nostrils by young children. To glance at the child and hear his nasal tone is often sufficient to form a measurably sure diagnosis. On the other hand, it does not always follow that the child has adenoids because he snores and keeps his mouth open, and is constantly enjoined by the mother to close the mouth and blow the nose, etc., as catarrhal tumefactions of the turbinates with enlarged tonsils may be the cause. In either case the treatment that succeeds in restoring an opening to Nature's normal breathing space—the nasal cavity—and thus enables its large mucous membrane surface, in an adult about thirty-six square inches, to perform its double function of supplying moisture and warmth to the inspired air, will accomplish good results in many ways that are oftentimes unexpected.

Coincident and sequelæ symptoms may be revealed by physical examinations, such as lymphoid granulations of the pharynx and tonsils ;

a general catarrhal condition of all the nasal and throat mucous membranes ; middle-ear inflammations, either from direct pressure on the orifices of the Eustachian tubes, or from extension of the inflammation by continuity to the middle ear. More or less deafness often results, whether it be due to the direct pressure of the growth on the orifices, or to the inflammatory extension through the tubes to the drum, and in some cases, though not often, when the result is a suppuration and bursting of the drum membrane.

In the treatment of adenoid vegetations it has not seemed to me an absolute necessity to make a complete and thorough excision, although that end should always be accomplished if possible. A thorough removal is more to be desired in Eustachian tube and middle ear complications than when a nasal stenosis is the chief symptom. Atrophy of a small remaining portion of the mass will usually follow the operation that has decidedly interfered with its blood supply.

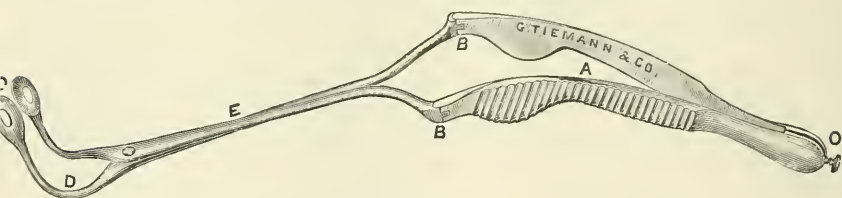
It was my first intention to speak only of the treatment of adenoids, and describe the new instruments made for me by the Tiemanns, of New York, for their excision, but at the request of the President I have added what I have just read. The mechanism of these instruments, which I shall presently describe, has rarely, if ever, been applied before to surgical instruments.

Lennox Browne advocates the use of the finger nail or the gouge-shaped thimble. In using either there is danger of detached pieces falling into the larynx, as the pressure of the finger upon the root of the tongue prevents the reflex resistance that would otherwise guard against such an accident. Gottstein's large ring is popular with many, especially in England and Germany. Griffin's malleable shank curette, which is much smaller than Gottstein's, is more popular in America, and I think justly so. Bosworth's rigid shank is preferable, but not so generally adaptable, nor is it so safe in the hands of a novice. Meyer, who has the honour of first describing adenoid vegetations and how to excise them, uses a ring-shaped knife through the anterior nares, which means is resorted to now by some operators. Justi and Hartmann have each their own particular side-to-side curettes which they apply through the mouth. Voltolini was for a long time partial to the electric wire loop inserted beneath the palate ; a very effective means, but one involving considerable trouble and not now much used.

Blake's operation through the anterior nares with the cold wire has recently been extolled by Chiari, of Vienna, who has used it to his own satisfaction in over two hundred cases. I have used Blake's method in about sixteen to twenty cases with some—even much—satisfaction as to the results, but have always chosen the cases suitable for its use. In no case have I ever tried it in a child with small nares, nor indeed on any subjects where I could not see the mass through the nares with a strong electric light. Gibbon's adenotome, a guillotine in principle, would possibly not prove as successful in other than its author's hands. Lowenberg and Michael prefer forceps made bullet shape at the jaws. Quillian's is somewhat similar to the preceding forceps, except that it has horizontal cartridge-shaped jaws. Gleitsmann's forceps, and also

Elsburg's, have been more popular in Germany, France and England than in America. The Hodge forceps, one of the few with fenestræ, has not proven popular on account of the length of its blades, straightness of its handle and smallness of the fenestræ, together with its narrow uvula space.

I will not attempt to mention the many other valuable instruments that have been used in this operation. Notwithstanding their large number and variety, it would seem that no one instrument has yet gained any decided preponderance of favour. The very nature of these cases, affording as they do so many ways of being reached and giving such brilliant results when successfully removed, is calculated to develop an individuality in the practised operator. May I use this reason as my excuse for describing the two instruments below?



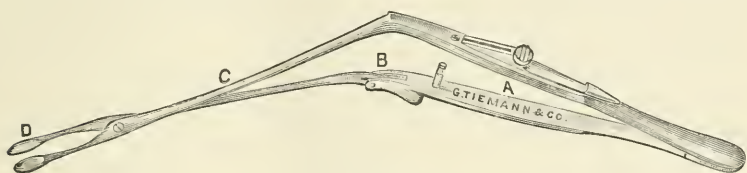
Post Nares Forceps.

The adenoid forceps, as illustrated, has a hinge and spring mechanism (B B and C) not generally applied to surgical instruments. The obtuse angle at (B B) removes the hand below the line of vision when grasping the handle, and the space at (D) allows the uvula to drop through and save it from contusion. The blades at (C), drawn too small in the illustration, have olive-shaped edges, not sharp but sufficiently acute to pass through adenoid tissue. The object of the fenestræ in the cupped jaws is to allow the soft tissues to be squeezed through and admit of a complete approximation of their edges. This obviates a tearing downward pull and hence a dislodgment of the instrument. With this advantage, several grasps at the growth may be made at one sitting, perhaps as many as may be necessary for the removal of the whole mass. The blades are so shaped that they will only grasp redundant and protruding tissue; hence the comparative safety of the instrument, even in the hands of a novice, or in other hands when used without sight. The instrument may easily be inverted and used as inferior laryngeal forceps, and on account of the short curve at (D) it is often better adapted to laryngeal purposes than the commonly used alligator forceps (Mackenzie's) with its long curve. The makers will reverse the angle of the handle, when desired, for this purpose, or vary the form and shape of the blades from their model as illustrated.

By a few turns of the screw at (O) the blades can be detached in order to render them aseptic. The instrument is beautifully made by the Tiemanns, of 107, Park Row.

The small nasal or naso-adenoid forceps, as illustrated, was designed to take many of the places now occupied by the alligators, by supplying from eight to twelve times as much power, and at the same time occupy-

ing no more space for small cavity operations. The mechanism (C B) consists of a spring handle, the upper part of which is rigidly joined to the upper shaft at an angle of forty-five degrees, while the lower part moves by a pivot through a curved slot in the lower shaft at their junction. The adaptation of this principle to surgical instruments is as new



Nasal Forceps.

as was the alligator principle not many years ago. The jaws at (D) admit of even a greater variety of shapes, and, indeed, the many times greater strength of this instrument, while its size is no larger, inspires a confidence in the operator that he could not feel while using the weaker alligator instrument. The downward turn of the handle (C) to (B) removes the hand from the line of vision, and the thumb catch at (A) holds the jaws (D) firmly together without the fear of breaking or even of springing. The shank is made long enough to reach adenoid tissue through the anterior nares when desired. The instrument may be used as a needle holder when properly grooved; its jaws may be made with teeth for tearing, or with sharp oval edges for cutting; vulsellum formed for using as tentacles; scissors shaped for clipping; with wedge and fenestræ (Rougeur) for nipping; duck-billed for seizing; or, indeed, the jaws may be shaped to serve almost any conceivable purpose.

While the instrument is modelled by the Tiemanns, of New York, in the shape illustrated above, this house will furnish it with jaws in any form and still retain its strong and characteristic mechanism.

LARYNGEAL PARALYSIS IN CHRONIC NERVOUS DISEASE.

By W. PERMEWAN, M.D. Lond., F.R.C.S. Eng.

By the labours of many observers, notably Semon and Burger, the relation of laryngeal paralysis to locomotor ataxy has been pretty accurately ascertained. The conclusions at which the latter observer has arrived are stated in his monograph, and are too well known to require repetition here. They are founded on a large number of cases recorded by careful clinicians, and do not seem likely to be disturbed by subsequent investigation. They show clearly that in tabes the centres of the nerves which spring from the medulla oblongata are often affected, and that of these the vagus accessorius is of all apparently the most

vulnerable. That the bulb is often affected in locomotor ataxy has been known pathologically for some time to nervous physicians; it is to be hoped that in the future that relation will also be recognized clinically, and that physicians will look to that organ (the larynx) where the effects of bulbar damage are most easily to be seen. There is one disease, however, much more common than tabes, but allied to it in causation, symptoms, and pathology, the connection of which with laryngeal paralysis has not been fully or systematically investigated.

Of the cases of tabes recorded by Burger, it is noteworthy that a considerable proportion were affected either simultaneously or subsequently by general paralysis of the insane, and the author quotes several suggestive remarks on the relation between these two affections. He says that the reciprocal relations of the cerebral and the spinal disease have been in recent times established from several sides. By no means unfrequently in marked cases of tabes signs of dementia manifest themselves, and, on the other hand, as Baillarger first proved, general paralysis often proceeds to the complete development of tabes dorsalis. Westphal believes that this is very often the case. He is of the opinion that in all cases of progressive general paralysis, where the patellar reflex fails, disease of the posterior columns of the spinal cord exists, even if no marked signs of motor or sensory disturbances are found. Tendrassik goes still further, and says that "almost every case of general paralysis is complicated by the clinical picture of tabes." General paralysis is, therefore, with good reason called the cousin german of tabes. Still more recently has Tendrassik put forward the view that the cause of most tabetic symptoms is to be found, not in the spinal cord, but in the cerebral cortex, and that between tabes and general paralysis no qualitative difference exists, and that the two diseases point only to a different localization of the same process. Whether, in cases of tabes complicated by dementia, laryngeal disturbances are to be more frequently expected than in cases of pure tabes has not yet been proved. A systematic laryngeal examination of cases of general paralysis appears to me no less desirable than the analogous examination of cases of locomotor ataxy.

Whether the views thus expressed by Burger are accurate or not, it is not for me to pronounce. From investigation of literature on the subject, and from conversation with authorities on neurology, however, I am led to conclude that the connection between these two diseases is very close; at any rate that—

1. The great cause of both is certainly syphilis. Dr. Gowers has emphasized this point in regard to tabes, and modern pathology is coming to much the same conclusion as to the etiology of general paralysis.

2. That many cases of general paralysis do begin as, and are often taken for, cases of locomotor ataxy.

3. That there is a distinct class of general paralytics which can be called "tabetic paralytics."

4. That inflammatory and degenerative changes are found in the spinal cord, medulla, and nerves in general paralysis of the same character as those shown by many observers to exist in tabes dorsalis.

Thus a distinct connection does exist between the two diseases, and it

seemed to me that it would be of much interest to follow out Burger's suggestion and examine laryngoscopically a fair number of cases of general paralysis, with a view of determining the presence or the absence of laryngeal paralysis.

My observations have been made in the wards of the Lancashire County Asylum, Rainhill, and I wish to thank the superintendent, Dr. Wigglesworth, for his kindness in placing the material at my disposal, and also Dr. Wood, medical officer, for his co-operation and for the confirmation his laryngoscopic skill afforded to my own observations. The results I obtained are not very striking, but are comparable with those made by Dr. Semon on cases of *tabes dorsalis*. I examined thirty-four cases of general paralysis in all stages and with all the various symptoms of that disease, and the results of examination were briefly as follows:—

CASE OF EXAMINATION.

It might be thought, and indeed I fully expected to have some considerable difficulty in examining the larynx of persons in the demented condition of these patients. As to that, I found the difficulty to vary according to the stage of the disease.

In the first stage the difficulty was purely one to be overcome by management and perseverance. It was not easy to induce them to open their mouths or to keep them open a sufficient time for examination. They had a great tendency to interrupt the examination by some startling statement as to the number of millions they were possessed of, or other like information—interesting in itself, but a little irritating when often repeated. If, however, one could, as one did after some little patience, induce them to remain quiet for a short time, then the examination differed in no way from that of a sane person. In the second stage, laryngoscopy was easy. They had mostly lost their expansiveness of mind, and had entered on a certain amount of quiet contentment, which rendered them an easy prey. In them, too, in a large proportion, the pharyngeal sensibility was much diminished, and the mirror could be manipulated with the greatest possible ease. This, too, ensured a correctness of result from the absence of reflex movements of the cords, against which we are warned by Burger, as everything was free from strain or spasm. In the third stage I found a number of patients quite impossible to examine. Either they were too demented to understand when told to open the mouth, or they had much difficulty in protruding and keeping out the tongue. If one tried to avoid this by depressing the tongue with a spatula, then the mouth involuntarily closed, and it was out of the question to attempt a laryngeal examination. I mention this difficulty of examination chiefly to emphasize the fact that, with one or two exceptions, it was only patients in the earlier stages that I examined, a circumstance which accounts, no doubt, for the small proportion of cases in which any laryngeal paralysis was found.

NUMBER OF CASES EXAMINED.

I examined altogether thirty-four cases. Of these only three were in the well-marked third stage. Nine were in the first stage, and twenty-

two were in the varying periods of the second stage, this number including several said by the medical officers to be in the transition period between the first and second, and second and third stages.

SYMPTOMS IN CASES EXAMINED.

I took no care to examine particularly cases of so-called tabetic general paralysis. Taking the two cardinal signs of tabes, viz., iridoplegia and absent knee-jerks, I find that of the thirty-four cases rather more than one-half had pupils inactive to light, but this was by no means generally combined with loss of knee-jerk. This combination occurred only a few (six or seven) times, and the commonest association was an inactive pupil and exaggerated knee-jerks. This corresponds with the picture of general paralysis, but not with that of tabes dorsalis.

RESULTS OF EXAMINATION.

1. *Character of the Voice.*—The voice had the variety of character common in this disease. In some cases it was notably high-pitched and monotonous—"sing-song" it might be called; in others very deep in tone, and in others quite normal. No characteristic quality was noted, except in one case, where—as will be mentioned—there was almost complete paralysis of one vocal cord.

2. *Sensibility of Pharynx and Larynx.*—This was mostly normal, that is, variable in the early cases, but in nearly all the second and third stage cases was notably diminished. This, of course, has long been known, and patients not very uncommonly suffer from more or less occasional entrance of food into the larynx. In two cases there was hypersensitiveness of the pharynx.

3. *As to Paralysis of Palate.*—In only two cases was there any want of power in the palate; one was in a case with normal larynx, and one was combined with bilateral abductor paralysis of the larynx.

4. *Laryngeal Paralysis.*—Out of the thirty-four cases examined, in seven there was more or less disturbance of laryngeal movement, and I will briefly mention them in the order in which they were examined.

Case 1: Ed. H., aged thirty-nine. Stage three. Pupils unequal, and the smaller inactive to light; knee-jerk exaggerated. Epiglottis very upright. Adduction of cords perfect, but cords do not always move outwards completely on deep inspiration.

Case 7: Thos. H., aged forty. Stage two. Pupils inactive to light; knee-jerks normal; palate moves well. Abductor paresis of both cords. They move outwards only slightly beyond the cadaveric position; on forced inspiration they move inwards.

Case 10: Thos. H., aged thirty-seven. Stage two. Pupils inactive; knee-jerks exaggerated. No paralysis of palate; abductor paresis of right cord.

Case 17: Christopher C., aged forty-five. Stages two and three; duration of disease, two to three years. Pharynx rather insensitive; palate normal; cords do not abduct fully: some paresis of abductors; adduction normal. This patient has since died, but, unfortunately, a complete *post-mortem* was not made.

Case 27: Ed. Q. Stage two. Pupils active; knee-jerk normal. Palate does not move well; both cords in the middle position—do not abduct on inspiration—bilateral abductor paralysis—they adduct well; voice not noticeably altered; epiglottis flaps to and fro during inspiration in a curious manner.

Case 32: Richard R. Early second stage. Pupils sluggish; knee-jerk weak; cords do not fully abduct; adduction good.

Case 34: John H. Late second stage. Formerly a good tenor singer, but while in the asylum has, during the past twelve months, lost power in his voice, and sings now in an unmusical and toneless manner. No paralysis of palate. Paralysis of left cord almost complete—does not reach the middle line in phonating; right cord passes across middle line, but does not meet left one completely. No local cause discoverable for the paralysis of the left cord.

Thus, of thirty-four cases of general paralysis, taken without discrimination, in seven there was more or less marked implication of the laryngeal muscles. I have not attempted to record any symptoms of what is called ataxia of the cords, because I have never been able to understand what is really meant by that term, and because the results would, I am confident, vary much according to the taste of the observer. Paralysis and paresis cannot, however be well mistaken, and admit of definite statement. It is, perhaps, unnecessary to say that every case in which there appeared to be signs of paralysis was examined repeatedly, and the results were confirmed by the opinion of Dr. Wood, himself an expert laryngoscopist.

1. *Frequency with which the Larynx suffers.*—These results show, I think, with some amount of conclusiveness, that in a certain proportion of cases of general paralysis the laryngeal nerves are affected. What that proportion is I cannot, from the comparatively small number of cases examined, presume to say. I bear in mind the experience of Semon at the Queen Square Hospital, who found that, in the first twelve cases of tabes, seven were affected with paralysis, while in the succeeding fifty-seven not a single case of laryngeal palsy occurred. The exact probability of finding laryngeal paralysis in general paralytics can only be estimated by the examination of a much larger number than I have had time to observe, but I am inclined, from my experience, to predict that the probability will be not less than twenty per cent., and possibly much higher.

2. *The Nature of the Paralysis.*—It will be seen that in all the cases except one the paralysis or paresis was limited to the abductor muscles. In the one exception the abductor was completely paralyzed, while the adductor was not so completely affected. This confirms, of course, the general truth of Semon's law, applied to cases of central origin. It is not yet certain whether in these cases the degeneration is confined to the nuclei or extends also to the laryngeal nerves, but in any event the cases are to all intents central, and differ thus from cases where a growth presses on the peripheral part of the motor nerves.

3. *The Relation of the Paralysis to Tabes Dorsalis.*—The physical symptoms of the cases of general paralysis in which I found paralysis of

the laryngeal muscles do not point to any chief or exclusive affection of the posterior columns of the cord—to the pathological substratum, in fact, of *tabes dorsalis*. In no case was the knee-jerk absent, and in three it was markedly exaggerated. The pupil light reflex was absent in four cases, but was normal in the most complete case—that of Ed. Q.—of bilateral abductor paralysis. There was, in fact, no regular combination of symptoms pointing to the existence of posterior sclerosis. The most striking combination was that of inactive pupils and exaggerated knee-jerks, a condition quite characteristic of the multifarious lesions of general paralysis. The inference from this seems to be that in general paralysis, quite as much as in *tabes dorsalis*, there is a distinct tendency for the centres, and possibly the trunks of the *vagus accessorius* nerve, to become affected by degenerative change, and that this affection is, as might be expected, not uncommonly followed by some degree of paralysis of the laryngeal muscles. It seems clear, too, that it is not only in cases of “*tabetic general paralysis*” that these results occur: they are as likely to occur in general paralytics who do not furnish the picture of locomotor ataxy.

I have quoted above the views of several authorities on neurology, as given by Burger, on the relation of the two diseases to one another; and that the relation is a very close one is agreed by all writers on the subject. I wish, however, to emphasize the fact that it is not necessary to strain the facts of that relationship too far in order to establish the probability of the occurrence of laryngeal affections in general paralysis. In other words, at least in most of the cases examined by me, it is the pathological condition underlying general paralysis, and not that underlying *tabes dorsalis*, which determines the implication of the laryngeal centres and nerves.

PATHOLOGY OF GENERAL PARALYSIS.

Considering the wide extent and varied character of the morbid lesions met with in general paralysis, it is not surprising that the larynx should be affected with other parts. The wonder rather is that it should escape in any case. For if a disease like *tabes*—a “system” disease as it is called, *i.e.*, a disease affecting particularly one set of fibres running lengthways in the cord—is so liable, as appears, to spread to centres in the medulla, and to affect the spinal and cranial nerves, then it is surely much more likely that an indiscriminate process like that of general paralysis, which spares no set of cells or nerve fibres, should, in its onward march, invade early and often the centres and nerves which subserve the movement of the laryngeal muscle. According to Dr. Julius Mickle, every part of the central nervous system may be affected in this disease. Thus, as regards the blood vessels, there may be thickening of walls, atheromatous, fatty or calcareous degenerations, dilatation, with aneurism and rupture, obliteration of their lumen, and formation of new vessels from buds on the walls of the old ones. The neuroglia may be hypertrophied or atrophied; it may contain numerous spider cells and granular bodies, or it may undergo amyloid, colloid, or fatty degenerations. The nerve cells may undergo sclerosis, atrophy, hypertrophy, calcification, and vacuolation. The nerve fibres may be tortuous, irregular, or atrophied

by the compression by interstitial tissue. Truly a formidable list of pathological changes. In the medulla in particular there is often "sclerosis, varying in degree, extent, and position; ependymal changes; "degeneration and atrophy of nerve cells of the bulbar nuclei; general "or partial atrophy of the bulb."

The cranial nerves, according to the same authority, frequently exhibit minute changes. I have not been able to find any complete account of pathological examination of the cranial nerves as a whole, or of the vagus accessorius in particular, nor am I aware of any such examination having been made in cases in which laryngeal paralysis has been found to exist. As regards the glosso-pharyngeal nerve, however, there is one point of interest. Dr. Campbell, pathologist to the Rainhill Asylum, informs me that he has found this nerve affected with chronic inflammation and degeneration in cases of general paralysis. This would account for the pharyngeal anæsthesia, which, as I have stated, is so common in these patients. It would seem highly probable that the same changes would be found, if looked for, in the vagus accessorius trunk, just as they are most certainly found in the nuclei of these nerves, and that hence the occurrence of laryngeal paralysis would be easily explained.

The conclusions at which I have arrived are therefore:—

1. That the larynx is not unfrequently affected in general paralysis of the insane.

2. That this affects first and chiefly the abductors.

3. That this does not necessarily depend on the association of tabes dorsalis with the more generalized disease, but is the direct result of the degenerative and inflammatory changes which affect the central nervous system in general paralysis.

DISSEMINATED SCLEROSIS.

I have examined two cases of disseminated sclerosis, but in neither was there any paralysis of laryngeal muscles.

BULBAR PARALYSIS.

It is usually stated that in bulbar paralysis affection of the laryngeal muscles is a late symptom and is not often complete. Dr. Gowers in the second edition of his work states that "laryngeal palsy rarely becomes "complete, and it is still rarer for the power of adduction to be specially "lost, common as abductor palsy is in some other forms of central degeneration." I have lately examined a case in which I have had the opportunity of watching the onset of abductor paralysis, its becoming absolutely complete, and the supervention on it of affection of the adductors, which are not, however, yet completely paralyzed.

John G., aged fifty-two, was admitted into the Liverpool Northern Hospital under the care of Dr. Barr, to whom I am indebted for permission to record the case, on September 16th, 1893. He complained of difficulty in articulation which had lasted nine months; for the past seven months he said he had been gradually getting to speak a good deal through his nose. There was some difficulty in masticating, and a feeling of "tightness" in swallowing. There was defective movement in the

muscles of the mouth; he could not whistle, nor could he prevent air escaping when blowing out his cheeks. The tongue was protruded in the middle line, and there were some fibrillary twitchings of it. The movements of the palatal and pharyngeal muscles were normal. The voice was weak and wanting in tone.

I examined the larynx and found both cords moved well, both in abduction and adduction. About a month afterwards I examined the larynx again and found some want of power to abduct completely in the cords: adduction still normal. The patient then left the hospital, and I did not see him again till July of this year, a fortnight ago. His condition was then much worse, and he presented the typical picture of bulbar paralysis. Lips, and tongue, and soft palate, almost completely paralyzed. On examining the larynx I found both abductors completely paralyzed, and some want of power in adduction.

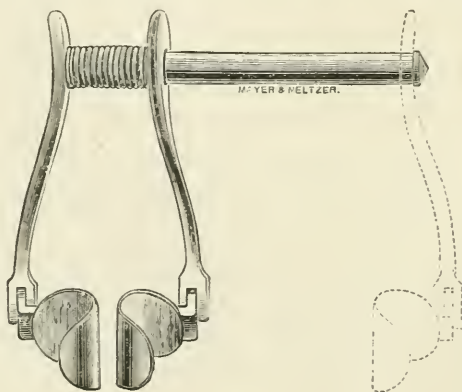
This is a rapid case of bulbar paralysis which will, no doubt, soon end in death; whether it is the typical nuclear disease, of course, remains to be demonstrated *post-mortem*. Dr. Barr has, however, no doubt that it is. Here, then, we have a case where bulbar disease has given rise, first to abductor, and then to adductor paralysis of the cords, coming on at apparently the same time as paralysis of the palate, and seeming likely soon to become complete. I shall be interested to know the experience of observers in cases of bulbar paralysis, particularly as even special works on nervous diseases give nothing like an adequate idea of the condition of the laryngeal muscles.

IMPROVED MOUTH GAG.

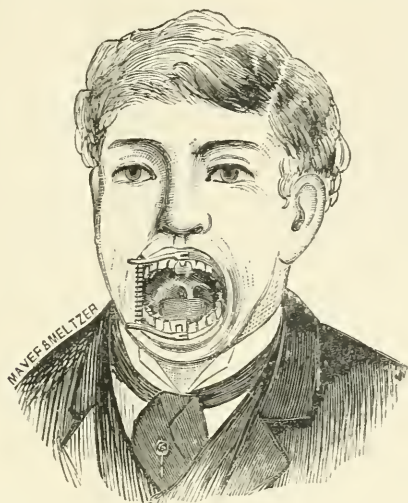
By JOHN BARK, F.R.C.S.ED.,

Honorary Surgeon Liverpool Throat Hospital.

THE accompanying cuts show a gag, which is a modification and improvement of one I reported in the JOURNAL OF LARYNGOLOGY for



February, 1893, and which I have used for some years in all operations about the mouth and throat with the utmost satisfaction. It consists of a vertical and two horizontal bars ; one of the horizontal bars is fixed to



one end of the vertical bar, while the other is perforated by the vertical bar, and moves freely up and down on it. They are kept apart by a strong spiral spring, which surrounds the vertical bar; at the end of each horizontal bar is suspended a tooth plate, which is covered by soft dental rubber, and has free lateral movement.

The chief feature of this gag is the position of the tooth plates. They are attached by one extremity to the horizontal bars and curve well towards one another ; the result of this is, that when the mouth is propped open, the horizontal bars are well above and below the incisor teeth, and so leave the mouth and throat perfectly free for manipulation.

It is extremely useful in the removal of enlarged tonsils and adenoids, under chloroform, ether, nitrous oxide or even in the absence of an anæsthetic.

Its advantages are—

Firstly : It gives a full and uninterrupted view of the mouth and throat.

Secondly : It is easily placed in position and removed.

Thirdly : It is automatic, and therefore needs no assistant to hold it in position.

Fourthly : The one instrument is adapted for any sized mouth, children or adults.

They are well made by Messrs. Mayer and Meltzer, 71, Great Portland Street, London, W.

ABSTRACTS.

DIPHTHERIA, &C.

Beck (Bern).—*Serum Syringe*. “*Zeitschrift für aerztl Polytechnik*,” 1894, No. 11.
 SYRINGE, with antiseptic needles. *Michael.*

Oppenheimer (München).—*Case of Septic Diphtheria treated by Behring's Serum; Death*. “*Münchener Med. Woch.*,” 1894, No. 43.

A CHILD, four and a half years old, suffering from diphtheria, was treated with Behring's serum. The case was complicated by suppuration of the glands of the neck and nephritis. Death occurred from failure of heart. The author believes that the case was one of septic diphtheria, and that the death was in no way related to the treatment. *Michael.*

Wallstein.—*Modern Treatment of Diphtheria by Heilserum*. (“*Das Heilserum und die moderne Behandlung der Diphtherie*.”) Berlin: Cassirer und Danziger, 1894.

A POPULAR review of this subject. *Michael.*

Kobrynsky (Kolomea).—*Diphtheria Serum Treatment from the Standpoint of a Practical Physician*. “*Allg. Wiener Med. Zeitung*,” 1894, No. 46.

THE results of the serum treatment are so little different from that of other treatments that we have no proof of its advantages, as now we have had a mild epidemic of diphtheria. The practical physician will do better to avoid the applications of such speculative medications. *Michael.*

Lublinski (Berlin).—*Accidental Effect of Diphtheria Antitoxin*. “*Deutsche Med. Woch.*,” 1894, No. 45.

A CASE of medium gravity was treated by Behring's antitoxin. Ten days after the commencement of the disease there suddenly occurred an exanthema on the skin, with pains in the joints, and high fever. The symptoms disappeared in a short time. The case was cured. The exanthema must be regarded as erythema exudatione multiforme. *Michael.*

Technique of Treatment with Heilserum. “*Wiener Med. Presse*,” Oct. 7, 1894.

THE injection of the serum should be made through the skin of the thorax with Koch's balloon syringe, with careful antiseptic precautions. *Michael.*

Sibbert (Frankfurt-a-Main.)—*Communications on Diphtheria Heilserum*. “*Deutsche Med. Woch.*,” 1894, No. 49.

THE author, who produces the serum, recommends those who publish their results to state in their publication the number of the bottle applied (every bottle has its manufacture number), so that the control of the observations can be improved. *Michael.*

Buchner (München).—*Serum Treatment of Diphtheria*. “*Münchener Med. Woch.*,” 1894, No. 45.

REPORT on the papers of Behring (see the report in this Journal), and recommendation of early treatment with the immunizing serum. *Michael.*

Hager (Magdeburg).—*Application of Diphtheria Heilserum*. "Centralbl. für Innere Med.," Dec. 1, 1894.

OF twenty-five cases (ten grave), only one died. Twenty-four hours after application most of the patients were in good health. No disadvantageous symptom was observed. The author recommends the treatment. *Michael*.

Scholz (Hirschberg).—*Accidental Effect of Heilserum Treatment in Diphtheria*. "Deutsche Med. Woch.," 1894, No. 46.

THE son of the author, ten years old, became feverish for two days, and then had membranes on both tonsils. The author performed injection of antitoxin. One day later, temperature was normal. The membranes disappeared three days later. The author also performed a prophylactic inoculation upon his daughter six years old. Three days later this child also had diphtheria, but it was a slight case. Both children ten days after the inoculation suffered from urticaria and pains in the joints. The author believes that the exanthem was caused by the injection.

Michael.

Strahlmann (Wildeshausen).—*Diphtheria Heilserum*. "Allg. Med. Centralztg.," Nov. 7, 1894.

OF over one hundred cases treated by Heilserum, not one has died. The author concludes that the invention of Heilserum is one of the greatest progressive steps in medicine. *Michael*.

Kuntze (Oschersleben).—*Contribution to the Treatment of Diphtheria by Heilserum*. "Deutsche Med. Woch.," 1894, No. 49.

OF twenty-five cases treated with serum, twenty-two (eighty-eight per cent.) have been cured. Of five cases tracheotomized, two have been cured. *Michael*.

Heubner (Berlin).—*Practical Remarks on the Treatment of Diphtheria by Antitoxin*. "Deutsche Med. Woch.," 1894, No. 36.

THE author uses Koch's balloon syringe. The condition of the glands, of the kidneys, and of the circulation, and the temperature are to be carefully watched during treatment. *Michael*.

Buchner, Ranke and Seitz.—*Treatment of Diphtheria with Heilserum*. Gemeinschaftliche Sitzung des aertzlichen Vereins und des aertzlichen Bazesverein's München, Meeting, Oct. 27, 1894.

SEE the reports in this number. Discussion on these papers :—

OERTEL remarked that it will not be possible to obtain results in most of the cases complicated by sepsis, caused by streptococci; the spreading of the membranes also cannot be prevented by the serum. The origin of albuminuria, or its increase, is caused by the introduction of an albumen-containing-fluid into the veins. The author concluded that the treatment should be applied, but that local disinfecting treatment should not be neglected.

BOLLINGER reported on some *post-mortem* examinations of cases treated by serum, concluding that the observed pneumonias have no relation to the treatment, and that it can be applied without damage.

AUB (chairman) concluded that it is very difficult to judge of the value of the new treatment by statistics, because the mortality of the disease is very different in different epidemics. The experiments should first be performed in clinical and polyclinical institutes, and practical physicians who use the method should communicate their experiences. *Michael*.

Seitz (München).—*Treatment of Diphtheria with Serum.* "Münchener Med. Woch.," 1894, No. 45.

OF eight children preventively inoculated with serum not one has got diphtheria.

Michael.

Rumpf.—*On the Treatment of Diphtheria by Behring's Serum.* Aertzlicher Verein in Hamburg, Meeting, Nov. 13, 1894.

THIS has been applied in twenty-six cases of children from ten months to twelve years of age. Seven have been tracheotomized, and of these two have died. Of ninety-one cases treated in other ways eleven (twelve per cent.) have died. But there are great differences in the mortality for the last few years; in both hospitals from thirteen to fifty-two per cent.

Michael.

Börger.—*The Results obtained by Treatment of Diphtheria by Heilserum.* Greifswalder medizinischer Verein, Meeting, Nov. 3, 1894.

SEE the report in this number.

Michael.

Bokay.—*Treatment of Diphtheria by Behring's Serum.* "Königlicher Verein der Aerzte in Budapest, Meeting, Nov. 3, 1894. (See the report in this number of the Journal.)

PERTIK described Roux's method of fabrication of the serum, and gave some historical notes on the discovery of the bactericidal power of blood-serum, first described by Fodor in 1877.

GROSZ remarked that intubation and serum treatment can both be applied in private practice with great advantage.

HÖGYES believed that a definite judgment as to the value of diphtheria treatment by serum cannot yet be given.

GERLOCZY had not observed favourable results in the Rochusspital. Of fourteen cases seven died, and the seven cured were only very slight cases.

BEHRENDT believed that the serum treatment would shorten the time of infection of diphtheria.

SSZEKAS believed that local treatment is without advantage.

SZEGO believed that local treatment is of great advantage.

FODOR concluded the discussion with some remarks on inoculation of infectious diseases in animals.

Michael.

Kuprianow (Greifswald).—*Experimental Contributions on Immunity against Diphtheria.* "Centralbl. für Bacteriologie," 1894, Nos. 10 and 11.

BACTERIOLOGICAL examinations, giving similar results to those of Behring. Details must be seen in the original.

Michael.

Heubner (Berlin).—*On the use of Heilserum in Diphtheria.* "Jahresschrift für Kinderheilkunde," Band 38, Heft 2 and 3.

IN the clinic at Leipzig there were treated without serum, during part of 1891 and all 1892, 113 cases, with a mortality of 64·6 per cent.; during 1893, 118 cases, with mortality of 45 per cent.; in 1894, 129 cases, with mortality of 42·6 per cent. The use of serum did not influence the number of operations required, or the mortality in tracheotomized or untracheotomized cases. The severity of the epidemic was greatest in 1891-92, less in 1892-93, and least in the latter half of 1893. The serum first used by the author was inferior to the second lot he obtained. His results were, with first serum, 40 cases treated, 21 deaths (52·5 per cent. mortality); with second serum, 39 cases treated, 14 deaths (35·9 per cent. mortality). The author is in favour of the serum treatment,

Michael.

Ranke (München). — *Serum Treatment of Diphtheria*. "Münchener Med. Woch.," 1894, No. 45.

IN the years 1889-93 the mortality of grave cases of diphtheria was fifty-nine (seventy-one per cent.). During the last winter the author treated eight cases with serum; seven of them have died. In the fatal cases there often occurred an unusual form of pneumonia; it was not possible to say if it had any relation to the injections. The experiments were now interrupted. From 1st May to 27th September, 1894, of sixty-four diphtheritic children, forty-three have died, equal to sixty-seven per cent. (!) Of thirty-two children intubated, thirty (!) have died. The author has never observed such a high mortality. Of nine cases treated by Ahronson's serum, one only has died. Of ten children also treated latterly with Behring's serum, only one has died. *Michael.*

Kossel (Berlin). — *Behandlung der Diphtherie mit Behring's Heilserum*. ("Treatment of Diphtheria with Behring's Heilserum.") Berlin: Karger. 1895. 39 pp.

REVIEW.

Michael.

Landen, R.—*Geschichte des Diphtherie-heilserum Behrings*. ("History of the Diphtheria-heilserum of Behring.") München: Seitz und Schauer. 1894. 23 pp.

REVIEW.

Michael.

Schuler (Berlin).—*Experiences in Practice with Ahronson's Antitoxin in the Treatment of Diphtheria*. "Allg. Med. Centralztg.," Nov. 3, 1894.

IN a girls' asylum in Berlin, of sixty-five subjects, twelve were affected by diphtheria. The other fifty-three were prophylactically inoculated by Ahronson's antitoxin. Of those only one was affected. The patients were not isolated. Of thirty-two diphtheria patients treated with serum, only one died. The local treatment only consisted in inhalation of salt solution. The author believes that it will now be possible to cure a greater number of patients than before. *Michael.*

Körte (Berlin).—*Report on the Results of Diphtheria Treatment with Behring's Heilserum in the Städtische Krankenhaus am Urban*. "Deutsche Med. Woch.," 1894, No. 45.

OF 132 children treated with heilserum, 81 (66·9 per cent.) have been cured. The whole mortality for the year 1893 was 54·9 cures. Of 106 cases treated during the same time without Heilserum, 53·8 per cent. have died. Of 42 tracheotomized cases treated by Heilserum, 47·6 per cent. have been cured. During the year 1893 (without serum), 22·5 per cent. were cured. Of 43 grave cases, 41·8 per cent. were cured; of 47 medium cases, 70·2 per cent.; of 31 slight cases, 96·7 per cent. So much the larger was the initial dose the better were the results, and also the earlier the treatment was begun. Ill effects by the treatment were not observed. The influence on the general condition was favourable. *Michael.*

Kossel (Berlin).—*On Serum Treatment of Diphtheria*. "Deutsche Med. Woch.," 1894, No. 43.

REPORT on this method in the Institut für Infektionskrankheiten in Berlin. The mortality was sixteen per cent. The effect of treatment was a hastening of the disappearance of membrane, and a reduction of temperature. Symptoms of intoxication were not observed. Scarlatinal and septic cases were not influenced. *Michael.*

Emmerich (München).—*Remarks on the Serum Treatment of Diphtheria in München.* "Münchener Med. Woch.," 1894, No. 45.

OF twelve bacteriologically examined fatal cases of diphtheria, in ten cases Loeffler's bacilli were found, but in nine cases, as cause of death, invasion of streptococcus was found. This result proves that in most cases the streptococcus is the cause of the fatal ending, and as the serum has no influence on this micro-organism, the chance of an effective treatment of diphtheria by the serum is so much lessened.

Michael.

Bokay.—*Results of Treatment with Behring's Heilserum in the Diphtheria Wards of the Stephanie Kinderhospital.* Königlicher Verein der Aerzte in Budapest, Meeting, Oct. 27, 1894.

OF thirty-five cases, five (fourteen per cent.) have died. His experiments prove that Heilserum is an effective remedy. There sometimes arises urticaria after the injection. Tracheotomy and intubation cannot be avoided through the use of serum. In cases of septic complications, the serum is without effect. Organic affections of the heart and paralysis cannot be prevented by this treatment.

Michael.

Möller (Magdeburg-Altstadt).—*Short Remarks on the Results with Heilserum in the Diphtheria Station of the Hospital Magdeburg-Altstadt.* "Centralbl. für Innere Med.," Dec. 1, 1894.

THE mortality of tracheotomized cases of diphtheria was in the year 1888 fifty-nine per cent.; 1890, fifty-seven per cent.; 1891, 51.5 per cent.; 1892, 48.6 per cent.; 1893, sixty-three per cent.; 1894, sixty-four per cent. During the latter months it was 55.6 per cent. in cases without, and 39.6 per cent. in cases treated with Heilserum. There has never before been such a small mortality, but variations have always been observed. Urticaria and albuminuria have sometimes been observed.

Michael.

Börger (Greifswald).—*Results obtained by Treatment of Diphtheria with Heilserum in the Greifswalder medicin. Klinik.* "Deutsche Med. Woch.," 1894, No. 49.

OF thirty cases of diphtheria, twenty-eight have been cured; of five cases tracheotomized, one has died. Of three hundred and thirteen cases of diphtheria treated during the last year (without Heilserum), forty-six (fourteen per cent.) have died. This is nearly the same proportion. The author says that he was very well satisfied with the results of the Heilserum, and that it has no toxic effects, but he states that the temperature ascends, urticaria arises, and diphtheritic paralyses, heart symptoms, pneumonias and albuminurias often follow its application.

Michael.

Moizard and Perregaux.—*Two hundred and thirty-one Cases of Diphtheria treated by Antitoxin.* "Bull. Médical," December 9, 1894.

THE authors give in this pamphlet the statistical results of the treatment of diphtheria by antitoxin during the months of October and November in the Trousseau hospital. Three hundred and two children were admitted with angina or laryngitis. The bacteriological culture was negative in fifty-three, who had simple angina; eighteen children are not noted in the statistics, being still in the hospital. In the remaining two hundred and thirty-one cases occurred only thirty-four deaths (14.71 per cent.). The authors have included in this number nine cases of children affected during the first few hours after admission into the hospital. (a) Pure diphtheritic anginas, forty-four cases, two deaths; (b) diphtheritic anginas with mixed bacterial associations (staphylococcus, streptococcus) forty-two cases,

six deaths; (c) diphtheritic laryngitis, ninety-four cases, seventeen deaths; (d) diphtheritic laryngitis with other microbes, fifty-one cases, nine deaths. Tracheotomy was performed thirty times, with twelve deaths; intubation, eighteen times, with seven deaths. Six times tracheotomy was performed after intubation. The injection of Roux's serum is without danger, but it is sometimes accompanied by cutaneous eruptions. The authors have observed fourteen cases of urticaria, nine of scarlatinous erythema, nine of polymorphous erythemas, and one of purpura.

A. Cartaz.

Loeffler (Greifswald).—*On Diphtheria. Explanation of the German Theses at the Seventh International Congress for Hygiene in Budapest.* 1894.
"Deutsche Med. Woch.," 1894, No. 47.

I. *The Cause of Diphtheria is the Diphtheria Bacillus.* Since it became possible to detect the bacillus in the membranes of diphtheritics, living and dead, and to produce diphtheria by it in animals, and to produce an antitoxin by aid of this bacillus, it is certain that it is the cause of the disease. II. *Clinical Cases resembling Diphtheria, but without the Bacillus, must be regarded as quite heterogeneous.* All cases should be examined bacteriologically (13). Those cases without bacteriological examination cannot be used in statistics; neither can the cases of death, because in some regions non-diphtheritic croup has a great mortality. III. *The Gravity of the different Epidemics is variable.* The cause of this fact is not yet known, but it is possible that the cases become more severe by mixed infection with streptococci. The streptococcal infections cannot be favourably influenced by Heilserum. It is, therefore, necessary that cases should be treated locally and prophylactically (14) with bactericidal applications, not only in the interest of the patients, but also (8) because portions of the membranes can infect others. In convalescents, bacilli are often found for a long time; it is, therefore, necessary that they should be examined for a long time (14). In many healthy persons the bacillus is found on the tonsils and in the pharynx without any danger to the patient. An exact explanation of this fact is not yet known, but it is possible that they are not accepted by a healthy mucous membrane. For the other theses no special explanation is necessary.

Michael.

Heming (Konigsberg-i-Pr.)—*Diphtheria and Croup in East Prussia.* "Deutsche Med. Zeitung," 1894, No. 97.

THE author has treated one thousand seven hundred and seventy-four cases of diphtheria in ten years, with fifty-four (three per cent.) deaths. He recommends treatment with ice and gargling with aqua calcis.

Michael.

Orth (Göttingen).—*History of Diphtheria and other Infectious Diseases.* Arbeiten aus dem path. Institut in Göttingen, 1893.

POLEMICAL article on Behring's history of diphtheria.

Michael.

Nicolle.—*Diagnosis and Treatment of Diphtheria.* "Normandie Médicale," Nov. 15, 1894.

A REVIEW of the recent works of Roux, Martin, and others upon the diagnosis of diphtheria and sero-therapy.

A. Cartaz.

Feer (Basel).—*Predisposition and Exciting Causes of Infection during the Earliest Years of Life for Diphtheria and other Infectious Diseases.* "Correspbl. für Schweizer Aertze," 1894, No. 22.

DURING the first year of life the disposition for the acquisition of infectious diseases, such as scarlet fever, measles, whooping-cough, and diphtheria is very small, but

in the second year of life the morbidity of these diseases ascends more and more, and then falls some years later. Krieger explains this by the theory that from recurrent catarrhs of the air-passages during the first year of life the predisposition to disease is increased. In diphtheria the author believes that infants are not so often infected because they cannot move themselves freely. As soon as free movement of the children increases they have opportunity to touch everything and keep their fingers in their mouths, bringing infective material into the mouth and nose, and so acquire disease. If in children less than one year old diphtheria arise, it is usually in the form of nasal diphtheria by infection from handkerchiefs used. To avoid these infections the author proposes to collect children in a "Schutzpferch" (a protected apartment), which can be kept clean by filling with clean linen. Boys are more predisposed to acquisition of infective diseases because the activity of their muscles arises earlier, and the opportunities of infection are thereby greater than in girls.

Michael.

Kohn, Emanuel (Wien).—*Diphtheria and School Hygiene*. "Wiener Klin. Woch.," 1894, Nos. 33 and 34.

EVERY child ought to gargle every day with permanganate of potassium. *Michael.*

Loeffler.—*Popular Advice on Diphtheria by the Sanitäts Commission in Greifswald*. "Deutsche Med. Woch.," 1894, No. 47.

DESCRIPTION of the disease and of its dangers. Recommendation of early treatment and of medical treatment also for slight diseases of the throat; strict isolation of the patient; disinfection of all that is used by the patient by boiling water; disinfection of the patient and the nurses by corrosive sublimate.

Michael.

Plant (Leipzig).—*Studies in Bacterial Diagnosis of Diphtheria and Angina*. "Deutsche Med. Woch.," 1894, No. 49.

IN some cases of angina the author always found Miller's spirochæta in great masses. He therefore believes that this micro-organism is the cause of angina. Bacteriological details are given in the original.

Michael.

Pauli (Lübeck).—*The Standard of Treatment of Diphtheria*. *New Communications on Diphtheria*. "Therap. Monats.," 1894, Nos. 9 and 10.

REVIEW of the new publications, especially upon the results of serum therapy.

Michael.

Concetti (Rome).—*Observations on the Pathogenesis and Treatment of Diphtheria*. "Allg. Wiener Med. Zeitung," 1894, No. 46.

A LONG paper without bringing forward anything new. The author recommends local treatment, and has thus obtained a mortality of twenty-five per cent., and by serum treatment 22.5 per cent. He hopes that by combination of both methods the results will be better.

Michael.

Behrend (Budapest).—*Hemiplegia following Diphtheria* (Archiv für Kinderheilk.," Band 17, Heft 5, 6.

A PATIENT, six years of age, suffering from diphtheria, was attacked, four days after its onset, with vomiting, stupor, and clonic spasms of the left extremities. This was followed by paralysis of the left side (including left half of face). Embolism of the arteria fossæ sylvii was diagnosed. Fourteen days later death occurred from paralysis of heart. At the *post-mortem* there was found a thrombus of the arteria fossæ sylvii four centimètres long, and degeneration of the heart.

Michael.

Wright and Emerson (Boston).—*On the Existence of the Bacillus Diphtheriæ outside the Human Body.* "Centralbl. für Bacteriologie und Parasitenkunde," 1894, Nos. 10 and 11.

THE authors have performed bacteriological researches in the diphtheria wards of the Boston City Hospital, and were able to find Loeffler's bacilli in a brush used for cleansing the chamber and on the shoes of a nurse. *Michael.*

Desseaux.—*A slight Epidemic of Diphtheria in St. Vaast du Val.* "Normandie Méd.," Jan. 1, 1895.

REPORT of thirteen cases of diphtheria, three of laryngitis, three deaths; ten cases of angina, ten cured—three by sublimate glycerine, seven by antitoxin injections. *A. Cartaz.*

Hutinel.—*Prophylaxis of Diphtheria in Hôpital Enfants Assistes.*

DESCRIPTIVE relation of the principal means (disinfection, isolation, etc.) employed in this hospital for the prevention and spread of diphtheria. *A. Cartaz.*

Sevestre.—*Prophylaxis of Diphtheria in Hôpital Enfants Assistes.* "Revue Mens. Maladies de l'Enfance," Oct. and Nov., 1894.

POLEMICAL note on the same subject. *A. Cartaz.*

Solbrig.—*Prophylaxis of Diphtheria.* "Vierteljahresschrift für Gesichtl. Medizin," 1894, No. 2.

THE author concludes that physicians, teachers, householders, and parents should be obliged to report every case of diphtheria. The patients should be isolated and removed to the hospital. Brothers and sisters of infected children should not go to school. Disinfection with sublimate to be compulsory. After death from diphtheria the bodies to be taken to mortuaries, no contact with them to be allowed, and conveyance of them by railway to be prohibited. Lastly, there should be State control of railways and other public conveyances, and also of the sale of food, of milk and cheese. Improvement of the standard of hygiene is also demanded. *Michael.*

Fürst.—*Systematic Prophylaxis of Diphtheria.* (Wien, 1894.) 36 pp.

POPULAR review of this subject without anything new. *Michael.*

Schaug (Dresden).—*Etiology of Diphtheria.* "Deutsche Med. Woch.," 1894, No. 49.

THE author has examined a case of xerosis conjunctivæ, and has found the xerose bacillus. This bacillus is not yet believed to be the cause of xerosis, but an accidental micro-organism. The results of the bacteriological and culture examination of the micro-organism have shown that it is a Loeffler bacillus, with little virulence. *Michael.*

Genersich (Klausenburg).—*Bacteriology of so-called Septic Diphtheria.* "Jahresschrift für Kinderheilkunde," Band 38, Heft 2 and 3.

IN some cases of so-called septic diphtheria, with all the symptoms of true sepsis, the author found Loeffler's bacilli alone, but no streptococci. He therefore objects to the name "septic," which properly denotes an intoxication by streptococci, and proposes the name "toxic diphtheria." He proves that symptoms ordinarily due to streptococci may be produced by pure Loeffler's bacilli. *Michael.*

Catrin.—*Diagnosis of Diphtheritic Angina; Treatment with Permanganate of Potash.* "Bull. Soc. Med. des Hôp.," July 27, 1894.

OF twenty-eight cases of angina treated by the author, eight were true diphtheritic angina. The others were: seven with streptococcus; five with staphylococcus; four with a bacillus similar to Loeffler's bacillus, but not colourable by Gram's method; one with coli-bacillus; one with pneumococcus; one with a large coccus. The eight cases of diphtheria had given a large percentage of mortality. Two cases in adult patients at the period of convalescence on the nineteenth and twenty-third days. The death seemed to be the result of heart failure, after some special symptoms of paresis of the limbs. The author has applied in each case paintings with a solution of permanganate to one in two hundred, and large boracic washes.

A. Cartaz.

Loeffler.—*Local Treatment of Diphtheria.*

SEE the report in this Journal. Discussion on these papers:—

STRUBING: The mixed infections of streptococci and Loeffler's bacilli are more deleterious than those of Loeffler's bacilli alone. The diphtheroid infections produced by streptococci are in most cases comparatively harmless, but in some cases the patient becomes septic. The author recommends Loeffler's local treatment, and believes that by it a great many cases are favourably influenced.

FENDERICH gave the statistics of Helferich's clinic from 1887 to 1894. Of one hundred and ninety-nine cases, one hundred and fourteen (fifty-seven per cent.) died. Of one hundred and fifty-three cases tracheotomized, one hundred (sixty-five per cent.) died.

BEUMER has treated two cases with good results, and hopes that Behring's Heilserum will fulfil expectations.

PEIPER has treated three cases; one of them had nephritis and pharyngeal paralysis.

LOEFFLER believes that virulent bacilli in the mouths of healthy persons or convalescents can spread the disease.

ABEL: On the immunizing power of Heilserum. (See the report in this number.)

Michael.

Wiemer (Apenrade).—*Local Treatment of Diphtheria.* "Deutsche Med. Zeitung," 1894, No. 90.

THE author recommends irrigation of the naso-pharynx with sterilized water and insufflations of dermatol powder.

Michael.

Loeffler (Greifswald).—*Local Treatment of Pharyngeal Diphtheria.* "Deutsche Med. Woch.," 1894, No. 42.

THE author has made a great many experiments on the effect of antiseptic medicaments on diphtheria bacillus, and has found the following mixture act best, viz.—alcohol 60, taluol 36, liq. ferri 4. In seventy-one cases in private practice in which Strubing used this, applying it every four hours and commencing on the first day of illness, there were no deaths. Of thirty hospital patients similarly treated five died. The application is painful, therefore Strubing adds a ten per cent. solution of menthol.

Michael.

Wallé (Wandersleben).—*Treatment of Diphtheria by Salaktol.* "Deutsche Med. Zeitung," 1894, No. 92.

THE author has treated some cases by local brushing with salaktol with good results, and recommends this treatment.

Michael.

Feige (Niesky).—*Treatment of Diphtheria.* "Therap. Monats.," 1894, No. 7. RECOMMENDS treatment by liquor ferri.

Michael.

Goldschmidt, D.—*Internal Administration of Perchloride of Iron in Diphtheria.*

"Revue de Médecine," Oct., 1894.

THE author advocates as the best treatment of diphtheria the internal use of perchloride of iron solution, one per twenty distilled water. He records thirty-eight cases, with two deaths.

A. Cartaz.

König (Hermannstadt).—*Treatment of Scarlatinal Diphtheria.* "Internat. Klin.

Rundschau," 1894, No. 45.

THE author recommends internal stimulating treatment without local applications. While he applied local applications he had fifty per cent., and now has only 8·10 per cent. mortality.

Michael.

Ritter (Berlin).—*Treatment of Diphtheria.* "Therap. Monats.," 1894, No. 7.

COMMUNICATION on experiments on the effects of antiseptics on the Loeffler bacillus, and recommendation of treatment by cyanide of mercury.

Michael.

Hagen (Berlin).—*The First Twelve Years of the Diphtheria Institution in*

Bethanien, with some Introductory Remarks and some Concluding Remarks by Dr. Edmund Rose. "Deutsche Zeitsch. für Chir.," Band 39, Heft 3 and 4.

OF one thousand nine hundred and twenty-nine tracheotomized children, seventy-one per cent. died. Of one thousand seven hundred and sixty-five not operated upon, twenty-six per cent. died. The details must be seen in the original. The greatest mortality occurred during the autumn, the least in summer. A maximum of cases of disease corresponds to a minimum percentage of cures, and *vice versa*. Simple laryngeal croup gave much better results (fifty-two per cent.) than the descending diphtheria of the pharynx. Rose describes the establishment of the diphtheria institution, reviews shortly the history of tracheotomy in the Bethanien hospital, and describes his method of operation. In nearly all cases inferior tracheotomy was performed. He prefers the blunt operation; he operates without narcosis. The after-treatment consists in application of stimulant and nourishing remedies. The operation was performed in all cases of stenosis, even if there was a dangerous complication.

Michael.

Carstens (Leipzig).—*Method of Intubation in Diphtheritic Laryngeal Stenosis.*

"Jahresschr. für Kinderheilkunde," Band 38, Heft 2 and 3.

REPORT of one hundred cases with seventy recoveries. Detailed description of this method of treatment with its advantages and disadvantages.

Michael.

Cooke, S. P.—*Diphtheria and Diphtheritic Paralysis and their Treatment.*

"Montreal Med. Journ.," Nov. 9, 1894.

NOTHING new.

R. Lake.

Rosenthal, E.—*Intubation in Diphtheria. Report of one hundred cases.* "Med.

Bull.," Oct., 1894.

THE author describes numerous cases in detail, and gives a full statistical table, from which he draws the following conclusions:—

No.	Age.	Mortality.	
3	under 1 year	2	
19	between 1 year and 2	17	
22	" 2 years and 3	13	
23	" 3 "	11	(most favourable age.)
22	" 4 "	13	
8	" 5 "	4	
3	6 years old	2	

Total 100

Total 62

The indications are those for tracheotomy. The author advises intubation under four years ; intubation followed, if required, by tracheotomy between four and seven years ; tracheotomy is indicated when loose membrane is present in the trachea ; intubation always in poor patients. The younger the child the longer will the tube be required, and it should be removed for severe recurrent dyspnoea, and high temperature, with bronchitis, on the third day. *R. Lake.*

Fischer (Hanover).—*Tracheotomy in Diphtheria.* "Deutsche Zeitsch. für Chir.," Band 39, Heft 3 and 4.

THE author reports upon an experience of one thousand cases, and states that the operation with blunt hooks is the best method. After having cut the skin with a bistoury only, the hooks are applied to divide the soft parts. In this manner it is possible to avoid hæmorrhage. Scarcely ever was a ligature necessary. He prefers high tracheotomy. He uses Luer's canula at first, and during the later days a canula with dorsal hole. He also gives his statistics. Of his one thousand cases, forty-one per cent. were cured. Of cases of diphtheria without tracheotomy, sixty-seven per cent. were cured. *Michael.*

Durno (Stoke Newington).—*A Case of Diphtherial Laryngitis in a Child eighteen months old, in which Tracheotomy was followed by Recovery.* "Brit. Med. Journ.," July 21, 1894.

THERE was pharyngeal infection as well, and the cervical glands on each side were very much swollen. On the fifth day, lung complications setting in, tracheotomy was performed. Hæmorrhage being great, the child was turned on his face after the trachea was entered. This step soon arrested the hæmorrhage. The tube was removed on the ninth day after operation for the first time, but had to be reinserted from time to time until the thirteenth day, when it was finally dispensed with. Child well on the eighteenth day after the operation. *Wm. Robertson.*

Roux, E., and Martin, L.—*Contribution to the Study of Diphtheria (Sero-therapy).* "Ann. Inst. Pasteur," Sept. 29, 1894.

DETAILED review of the method of preparation of antitoxin. With the culture of the pure diphtheritic bacillus in broth, under the influence of humid air at 37° Cent., in one month they can obtain the toxin. The liquid is filtered and kept in bottles, protected from the light. The pure toxin is mixed with (one part to three) Gram's liquor in order to prevent too toxic action. The horse is the best animal from which to obtain antitoxin ; it has a great tolerance for inoculations, which increase in quantity and virulence during two or three months. From twenty cubic centimètres of diphtheritic culture, with iodine, the dose is day by day increased to two hundred or three hundred cubic centimètres. After that period the horse is immunized, and the serum is antitoxic. The quantity of serum obtained is very large at every bleeding—viz., two or three litres. By comparative experiments on guinea-pigs and rabbits the authors have determined the antitoxic power of the serum. With a proportion of one to one hundred thousand of serum to the weight of the animal the immunity is acquired for a dose of toxin fatal to the control of animals. Diphtheria has been inoculated on various animals, and the antitoxin injected. Some hours afterwards, or later, when the injection is sufficient, or made not too late, the disease is rapidly cured. After these repeated experimental researches the inoculation has been tried upon children. *A. Cartaz.*

Levy.—*Serum Treatment in Tetanus and Diphtheria.* Unterelässischer Aerzteverein in Strassburg, Meeting Oct. 27, 1894.

THE paper will be afterwards published in detail.

KRÖLL reported one grave case of diphtheria treated with Heilserum. It was cured.

WICK : Of ten cases treated by serum, not one has died.

KOHTS remarked that we have at present a mild epidemic of diphtheria. Of three hundred and ninety-nine children tracheotomized during the last four years, fifty-six per cent. have been cured. Of two hundred and eighty-three cases of pharyngeal diphtheria, eighty per cent. have been cured. Of nine tracheotomized cases of the same quality, four had Heilserum, and five none. One of the Heilserum cases and one of the others have died ; the latter not from diphtheria, but from a tumour of the thymus compressing the trachea under the canula. Up to now no special effect of the Heilserum can be reported.

FLOCKEN recommended the treatment of diphtheria by calomel. Local treatment is unfavourable. The results of Heilserum obtained up to now are not encouraging.

RECKLINGHAUSEN remarked that it is impossible to exclude grave cases in diagnosis of diphtheria if bacilli are not found ; the diagnosis must be a clinical, not a bacteriological one.

NAUNYER hoped that the serum will be as effective in the human subject as it is in animals. *Michael.*

Behring (Halle).—*The Question of Immunity against Diphtheria.* “Deutsche Med. Woch.,” 1894, No. 46.

To obtain immunity, the fourth part of the therapeutic dose should be injected as the author says—one hundred and fifty “immunizing units”—but it cannot be stated with certainty that by this method all infection can be avoided. In children inoculated with sixty “immunizing units” the author has observed eruption of diphtheria some days after the inoculation. The protective effect of the inoculation increases with the number of “immunizing units.” The protective effect is greater if from time to time smaller quantities are inoculated than if a large quantity is used at once, because the discharge of antitoxin is so much the greater as it circulates more concentrated in the blood, and as greater doses can easily produce suppuration by the movements of the children if the place of injection is irritated. *Michael.*

Hilbert.—*Results of the Immunizing and Curative Treatment with Heilserum in the Universitätspoliclinic.* Verein für Wissenschaftliche Heilkunde in Königsberg-i-Pr., Meeting, Nov. 12, 1894.

OF sixty-four immunized children, five had diphtheria (!). Of eleven cases of diphtheria (eight slight cases) not one has died.

FALKENHEIM : Of seventy-five children under his observation treated without heilserum, nine (eleven per cent.) died. Of six cases tracheotomized, three died.

SCHREIBER remarked that in other years also cases which seemed to have an absolutely fatal prognosis have been cured. Sometimes cases which seemed to be simple follicular angina prove their diphtheritic character by the paralyses which follow.

CZAPLEWSKY believed that it is very difficult to give a certain bacteriological diagnosis of septic diphtheria. *Michael.*

Maurel.—*Iodoformized Vapours in Acute Coryza and Bronchitis.* Soc. de Therapeut., Nov. 14, 1894.

THE author has had very good results in acute coryza by means of iodoform wool plugs. When bronchitis appears he gives (six times a day) lozenges of iodoform (0.005 milligrammes). This medication is also efficacious in chronic bronchitis, pulmonary tuberculosis and arthritic chronic coryza. *A. Cartaz.*

Mattison, J. B.—*Cocaine Poisoning.* "Times and Register," Nov. 3, 1894.

A GENERAL review of previous discussions and opinions on the subject, with a record of four fatal cases of recent date, all following the use of four per cent. solutions. Two were urethral cases; in one sixty milligrammes, in the other twenty milligrammes was the dose employed. The third was from the application of the same percentage to a blistered surface; the fourth was a rectal case, and the dose was forty milligrammes in two doses with an interval of ten minutes. The symptoms were excitement, convulsions, and death, in the third case all in one minute. Autopsies on the first two showed intense pulmonary congestion.

R. Lake.

Rosenberg (Berlin).—*The use of Cocaine to prevent Respiratory Disturbances during Chloroformization.* "The Med. Week," Nov. 23, 1894.

THE author states that he has found by experiment that, at the beginning of anæsthesia, if the blood-pressure be considered as equal to 100, the systole is represented by 210, and the diastole by 40. Under normal conditions, on the contrary, the blood-pressure being the same, the systole is represented by 120, and the diastole by 90. These modifications are due to respiratory disturbances consequent upon irritation, by the chloroform, of the mucous membranes of the upper air-passages. To obviate this irritation the mucous membrane of the nose should be anæsthetized with cocaine before the administration of chloroform. By this simple measure the disturbance of respiration and the frequently fatal accidents which follow are prevented. [The Reporter has frequently been able to verify the above, and to remark the ease with which a patient, previously anæsthetized with a two per cent. solution of cocaine and resorcin, takes chloroform. Another equally valuable sequence of such a course—cocaine previous to chloroform—is the greatly diminished loss of blood. In a case *e.g.*, of tonsils and adenoids to be removed, cocaine being painted on each part previous to the administration of chloroform, the tonsils the first to be removed are excised with a minimum loss of blood, scarcely any at all in fact, which facilitates the further removal of the adenoids. This also is notably followed by less hæmorrhage than if the cocaine had not been previously used.—REP.]

Wm. Robertson.

Helme.—*Bromide of Ethyl in Oto-Laryngology.* "Ann. des Mal. de l'Oreille, etc.," Feb., 1894.

REVIEW of the subject: conclusion—nothing superior to it for operations of short duration.

Joal.

Rehn (Frankfurt-a-M).—*Prussiate of Antipyrin and its Application in Whooping Cough.* "Münchener Med. Woch.," 1894, No. 46.

THE author has applied the medicament in some cases with good results, and recommends the application.

Michael.

Frühwald (Wien).—*Antispasmin: a New Drug for Whooping Cough.* "Archiv für Kinderheilk.," Band 18, Heft 1 and 2.

THE writer has applied the new drug (narceinnatrium-natriumsalicylicum) in sixty-four cases of whooping cough, and observed improvement in a short time.

Michael.

Tobeitz (Graz).—*Prophylaxis and Treatment of Whooping Cough.* "Archiv für Kinderheilk.," Band 18, Heft 1 and 2.

NOTHING new.

Michael.

Silbermann (Breslau).—*Diseases of the Right Heart following Whooping Cough.* "Archiv für Kinderheilk.," Band 18, Heft 1 and 2.

IN many cases of whooping cough during the attack we can observe weakened action of the heart, consisting in almost abolishing of the heart sounds, and of the pulse with great frequency of the latter up to one hundred and fifty or diminution to fifty to the minute. Sometimes dilatation of the heart can be detected during the attack. In some cases the author has observed dilatation of the right heart, also during the whole time of the disease weakened pulse, albuminuria, and a systolic murmur of the tricuspid valve can be detected. The author relates five cases, four of which are cured. One of the children died in an attack of cough. The *post-mortem* examination showed great dilatation of the right heart.

Michael.

NOSE AND NASO-PHARYNX.

Scheff (Wien).—*Contribution to the Anatomy and Physiology of the Nose—The Path of the Air-Stream in the Nose.* "Internat. Klin. Rundschau," 1894, No. 40.

THE author concludes: In the accessory cavities of the nose differences of pressure occur in sleep respirations which are parallel to those that arise under the same circumstances in the nose itself. If the respirations are very deep the variations are only some millimètres of water, and are never as great as are described by Braune and Clasen (sixty millimètres of mercury or seven hundred and eighty millimètres of water). It is, therefore, certain that the theory of these authors that the accessory cavities have an influence on the direction of the air in the olfactory region cannot be right. Concerning the path of the air-stream through the nose, the author proved, by experiments in the cadaver and by casts of the nose, that the air-stream passes especially through the middle nasal channels.

Michael.

Raugé—*On the Part played in Phonation by the Nasal Fossæ.* "Ann. des Mal. de l'Oreille," etc., Feb. 1894.

AFTER a careful study of the formation of the vowels and consonants, the author distinguishes between buccal vowels and nasal vowels; the latter are due to the resonance of the sound in the nasal fossæ, while in the former the nasal passages are not employed. Hence he proposes to replace the terms, invented by Kussmaul, of "open" and "closed rhino" by the more natural ones of "rhino" and "stoma." The type of stoma is the dull, extinguished voice of cases of adenoids, first described by Meyer.

Joal.

Ziem (Danzig).—*Nasal Affections and Infectious Diseases.* "Münchener Med. Woch.," 1894, No. 49.

VERY often infectious diseases are localized in the respiratory organs, especially in the naso-pharynx. The author has observed that in persons who are affected with nasal disorders infections, especially of diphtheria, are more often observed than in persons with healthy noses. He also observed in persons who had disease of one nasal cavity the origin of diphtheria on this side. He, therefore, recommends nasal douches with salt solutions made by Mayer's pressure pump.

Michael.

Bogdan.—*Massage of Nasal Mucous Membrane.* "Wiener Med. Presse," 1894, No. 2.

RECOMMENDATION of this treatment.

Michael.

Laker (Graz).—*Massage of Nasal Mucous Membrane.* "Wiener Med. Presse," 1894, No. 2.

The author prefers massage by hand to massage by instruments. *Michael.*

Löwenstein (Elberfeld).—*Vibratory Massage of the Nasal Mucous Membrane.* Festschrift des Jubiläums der Aerzte des Reg. Bez. Düsseldorf, 1894.

RECOMMENDATION of this treatment. *Michael.*

Bresgen (Frankfurt-a-M.).—*The Causes of Nervous Headache in School Children.* "Wiener Med. Presse," 1894, No. 37.

THE author classifies these as follows: (1) diseases of brain and membranes; (2) asthenia, due to acute and chronic diseases; (3) chronic indigestion, due to bad feeding; (4) mental overstrain; (5) reading and writing in bad light; (6) diseases of nose, ear and eye. *Michael.*

Chapuis, P.—*Syphilitic Sore of the Nasal Mucous Membrane.* "Gaz. des Hôp.," Oct. 13, 1894.

THE author has collected twenty-two cases of syphilitic chancre of the pituitary membrane (some recent observations are not reported in bibliography). He reviews the principal symptoms of these ulcers, and quotes especially the situs at the proximity of the opening of the nasal fossæ; the erysipelatous colour of the surrounding parts; the adenopathy, often painful, the pain being probably the result of secondary infection; some special adenopathy in front of the axial vertebra, in the pharynx, and on each side of the hyoid great cornu. *A. Cartaz.*

Girandean.—*Bulbar Tabes; Trophic Ulcers of the Nose and both Ears.* "Presse Méd.," Oct. 7, 1894.

IN a man, thirty-eight years old, tabetic from six years of age, with the classical symptoms (ocular, genito-urinary, gastric pains, abolition of patellar reflexes), Girandean has observed curious trophic lesions appearing spontaneously without pain. These ulcerations were situated on the nose and both ears; a large one (one centimètre) over the naso-labial ridge, another on the lobe of the nose, and on the margin of both nostrils; superficial erosion, on both ears and symmetrically superficial cutaneous ulceration of the superior part of the concha. Girandean carefully studies the differential diagnosis, and concludes as to the trophic nature of these lesions. *A. Cartaz.*

Dunn, J.—*Effect of Nasal Breathing upon Air contained in the Lachrymal Duct.* "Virg. Med. Month.," Nov., 1894.

A PATIENT presented a double mucocoele of the lachrymal sac and duct, which could be evacuated by forcibly blowing the nose. The author thinks that in nasal breathing there is a rarefaction of the air, which acts on the lachrymal duct to empty it, though it is not necessary, as is proved by the fact that in bony occlusion of the posterior nares the tears do not flow over the cheek. *R. Lake.*

Galtier, J.—*Flow of Blood by the Lachrymal Ducts, during Epistaxis, after Plugging of the Nasal Fossæ.* "Lyon Médical," Oct. 14, 1894.

THE title indicates the case sufficiently. *A. Cartaz.*

Straight, H. S.—*A Case of Vaso-motor Rhinitis.* "Ann. Ophth. and Otol.," Oct., 1894.

THE patient, who suffered with paroxysmal sneezing, excessive discharge, lachrymation, etc., had been subject to chromic acid cautery, and had used sprays, washes

etc., with no benefit before the author saw him. He was eventually completely cured by a superficial cautery of the anterior extremities of the inferior turbinate bones, the idea being to produce a sedative effect upon the nerve endings.

R. Lake.

Spicer, Scanes (London).—*Treatment of Fætid Suppuration of the Nose.* "Brit. Med. Journ.," June 23, 1894.

THIS consisted in freely opening, curetting and draining Highmore's antrum. The suppuration of the antrum was complicated with nasal polypi. A previous entrance to the antrum per the alveolar ridge was found inefficient. Mr. Lane referred to a similar procedure adopted abroad (!)

Wm. Robertson.

Cohnstadt (Erfurt).—*Rhinitis Purulenta.* "Correspbl. des Allg. Aerzt. Vereins in Thüringen," 1894, No. 2.

REVIEW.

Michael.

Lewy, Benno (Berlin).—*On Rhinitis Acuta in Children.* "Archiv für Kinderheilk.," Band 17, Heft 5, 6.

DESCRIPTION of the different forms of rhinitis, containing nothing new.

Michael.

Dreyfuss (Strasburg).—*On Rhinitis Purulenta. Case of Periostitis and Suppuration of Left Turbinal, due to Caries of a Tooth.* "Wiener Med. Presse," 1894, No. 5.

THE suppuration stopped without any special treatment, after extraction of the carious tooth.

Michael.

Dunn, J.—*Case of Fronto-Ethmoidal Mucocoele.* "Virg. Med. Month.," Nov., 1894.

THE patient presented a small tumour at the left inner canthus, and internally there was a tumour, covered with bone, pressing the left middle turbinated bone against the septum. The tumour was evacuated from the outside, and proved to be a mucocoele, which involved the anterior middle and posterior ethmoidal cells. There was a previous history of injury. The advisability of exploring the frontal sinus from the inner canthus is considered; the trocar would pass through the anterior ethmoidal cells. In passing a trocar into the frontal sinus from the nose it should be passed upwards, and backwards, and slightly outwards.

R. Lake.

Müller (Vienna).—*Abscess of the Frontal Sinus.* "The Med. Week," Dec. 7, 1894.

THE author believes that almost all cases of abscess of the frontal sinus which have come under his notice were consequent on influenza. Abscess of the orbit and that of the sinus are to be distinguished from each other. In empyema of the sinus, he says, ptosis is well marked at the onset, while the swelling of the eyelids is less so; but in abscess of the orbit the ptosis is exactly proportionate to the swelling of the eyelids. Chronic empyema of the sinus may be primary or follow acute empyema. This gives rise to catarrh of the mucosa and unilateral headache; if occlusion, then distension of sinus supervenes, and is easily diagnosed. After this pointing of the abscess, which takes place in front and below at the angle of the orbit. Bougies per nasum to dilate natural opening are recommended, but this is often impossible; better to open the sinus and introduce the catheter from above. Even after this suppuration persists for a long time. Fuchs has successfully resected the whole mucosa of the sinus, with its anterior bony wall, recovery following in three weeks.

Wm. Robertson.

Raugé.—*The Infundibulum and the Orifices of the Accessory Sinuses.* "Ann. des Mal. de l'Oreille," etc., Mar., 1894.

AFTER a minute anatomical study of the region the author indicates the different proceedings required in catheterization of the sinuses. *Joal.*

Todd (Market Drayton).—*Abscess of the Antrum after Influenza complicating Polypi.* "Brit. Med. Journ.," July 21, 1894.

THE greater part of the discomfort in this case, a man aged sixty-eight, occurred after an attack of influenza some months before. There was pain over the cheek-bone, lachrymation, and inability to drink and swallow. He was deaf on the right side, and had neither taste nor smell. Both nostrils were engaged by the polypi. His right cheek was swollen, as well as the right side of the palate and right gum. After the removal of the polypi he caught cold, with an increase in suffering in the right cheek. Finally, the antrum abscess opened near the site where the first and second molars should have been. *Wm. Robertson.*

Batut.—*The Operation of Rouge and its Indications.* "Ann. des Mal. de l'Oreille," Feb., 1894.

AFTER describing this operation, which he thinks is too much neglected now-a-days, the author maintains that this "labio-gingivotomy" can be of great service in cases of myxomata, enchondromata, syphilitic sequestra, and tubercular ulcerations in the nasal fosse. It may also prove of assistance to the operator in treating the accessory sinuses, and finally it assists a complete exploration of the nasal cavity. *Joal.*

Hess (Falkenstein).—*Treatment of Deviations of the Septum Nasi by Electrolysis.* "Münchener Med. Woch.," 1894, No. 39.

RECOMMENDATION of this treatment. The author, who has paid special attention to phthisical patients in his hospital practice, finds that removal of all impediments to free nasal respiration has very beneficial effect on the patient's general health. With electrolytic treatment no after treatment is required. *Michael.*

Levy.—*Deviations of the Septum Nasi.*

By digital exploration, deviations of the posterior parts of the septum can often be found. *Michael.*

Heller (Nürnberg).—*Irrigation of the Naso-Pharyngeal Cavity in the Treatment of Infectious Diseases.* "The Med. Week," Nov. 23, 1894.

THE author holds that this pharyngo-therapy constitutes an excellent method of treating general infectious diseases, and characterized by reduction in fever, shortening of the course of the disease, and lessening the liability to complications. He points out that almost all infectious diseases, with the exception of cholera and dysentery, result from the aspiration of the infectious agent, the latter first attacking the nasal cavities and pharynx, where it proliferates during the first stage of incubation; after which the virus penetrates into the blood and organic fluids, thus producing general infection. In erysipelas of the face the therapeutical effect of irrigations of the naso-pharynx is particularly striking. In diphtheria, croup, whooping cough and typhoid there are indications for this method, and in the treatment of cervical adenitis, which Dr. Heller considers due to strumous rhinitis, in which the cervical glands are said to play the same rôle as the inguinal glands in syphilitic chancre.

Wm. Robertson,

Hermet.—*Should Adenoids always be Operated upon?* “Journ. de Clinique Infantile,” Dec. 20, 1894.

THE author believes the operation is too frequently practised; numerous cases can be cured by internal or general medication (iodine, salt baths, etc.). The surgical intervention must be postponed when there is no otitis and no aural complication, no general depression, arrest of development, great difficulty of breathing, etc. Of one hundred and three cases of adenoid vegetations, Hermet has found only fourteen cases necessitating curetting of pharynx. *A. Cartaz.*

Kuhn (Würzburg).—*Syphilis of Naso-Pharynx and Otolgia.* “Münchener Med. Woch.,” 1894, No. 39.

IN three cases of syphilis of the naso-pharynx the chief symptom was otalgia. These seem to indicate the necessity for a careful examination of the naso-pharynx in all cases of otalgia. *Michael.*

Nelaton (Paris).—*The Treatment of Naso-Pharyngeal Polypus.* “The Med. Week,” Dec. 7, 1894.

THE point of this lay in leaving the palate wound (made to facilitate removal of the polypus) open for two reasons: (1) the growth tended to recur, and (2) through the fissured palate any recurrence (which could be treated by interstitial injections of chloride of zinc) could be watched. Histological examination was not always sufficient, as even fibromata were known to take on malignant action, although for years previously they appeared to have been benign. It would appear, therefore, to be more prudent under any circumstances to leave the path open after ablation of a naso-pharyngeal polypus through the palate in order to be able to watch for its recurrence, and especially to combat its progress as stated. Dr. Lucas Champonnière recommends immediate repair of the palate after ablation of the growth, and should there subsequently be a tendency to recurrence there is nothing to prevent our once again splitting the palate. *Wm. Robertson.*

Bruns (Tubingen).—*Operation upon Naso-Pharyngeal Polypi.* “Beiträge zur Klin. Chir.,” 1894, No. 3.

THE author recommends the removal of the naso-pharyngeal part of these tumours *per vias naturales*, and the retro-maxillary part by resection of the zygoma. *Michael.*

Tuffier.—*Naso-Pharyngeal Polypus—Resection of the Superior Maxillary Bone.* “Bull. Soc. de Chir.,” Paris, Vol. XX., p. 766.

THE case of a young man, nineteen years of age, with a large naso-pharyngeal fibromatous polypus. Ablation was performed by resection of the superior maxillary bone and immediate restoration of the palatine vault by means of a large flap of genio-gingival mucous membrane, sutured to the opposite part of the palatine vault and behind to the soft palate. The operatory results were perfect. No facial deformity resulted, and phonation was absolutely correct. *A. Cartaz.*

MOUTH, PHARYNX, &C.

Heymann (Kolmar).—*What is Stuttering?* “Deutsche Med. Zeit.,” 1894, No. 82.

STUTTERING is an essential psychical disease, not to be confounded with other pathological conditions, especially with hysteria. *Michael.*

Rethi (Wien).—*Cortical Centre, Subcortical Paths and Co-ordination Centre for Mastication and Deglutition.* Sitzungsberichte der Kais. Akad. der Wissenschaften in Wien, July, 1893.

THE cortical centres for swallowing and mastication are situated in front of the centres for the extremities. The subcortical paths and the centre of co-ordination lie beneath the thalamus opticus and the pedunculus cerebi. Here also lies the "will" centre for mastication and deglutition. Irritation of the cortical centres produces typical movements of mastication and deglutition. *Michael.*

Bresgen (Frankfurt-a-M.).—*Diseases of the Salivary Glands.*

A SHORT review in the "Diagnostisches Lexicon für praktische Aerzte." Wien: Urban und Schwarzenberg. *Michael.*

Winkelmann (Barmen).—*Case of Chronic Stomatitis ending in Death.* "Deutsche Zeitschr. für Chirurgie," Band 39, Heft 1 and 2.

A PATIENT, aged forty-six, suffered from a bullous inflammation of the right half of the tongue. Anti-syphilitic and other treatment did no good. The vesicles and ulcers spread over the gums, mucous membrane of the cheeks, pharynx, and the larynx. The patient died of fever, diarrhoea, and bronchitis. Bacteriological examination gave no definite results, but the author believes the case was one of chronic foot and mouth disease (Maul und Klauenseuche). *Michael.*

Petre, A.—*Infectious Aphthous Stomatitis.* Thèse de Paris, 1894.

APHTHOUS stomatitis, with general and infectious symptoms, is a contagious disease similar to and dependent upon the aphthous fever of cattle. The contagion is sometimes direct, but mostly indirect, through the milk of affected cows. Not very serious in adults, this stomatitis is dangerous in children. *A. Cartaz.*

Leyden (Breslau).—*Gonorrhœal Affections of the Mouth in the New-Born.* "Centralbl. für Gynäkologie," 1894, No. 8.

A CHILD with conjunctivitis neonatorum had also a pustule on the gum, in the secretion of which gonococcus was found. Cure. *Michael.*

Rosenberg (Hamburg).—*Treatment of Leukoplakia.* "Deutsche Med. Woch.," 1894, No. 34.

REPORT of a case that had for years withstood various treatments, but which the author cured by brushing with twenty per cent. solution of potassium iodide. *Michael.*

Mendel.—*Lingual Tuberculosis and Dental Glossitis.* Soc. Française de Dermatol., Dec. 13, 1894.

TUBERCULOUS ulcer of the tongue developed in a man twenty-seven years old, by irritation of a sharp first molar tooth. *A. Cartaz.*

Sauvage, A.—*Cold Abscess of the Tongue.* Thèse de Paris, 1894.

THE author describes chronic abscess of the tongue, and shows from many authors that these suppurations are of a tuberculous nature. *A. Cartaz.*

Wertheimber.—*Erythematous Tongue Inflammation.* "Münchener Med. Woch.," 1894, No. 47.

THE author had observed sometimes in infants inflammation of the mucous membrane of the tongue, sometimes combined with soor or vesicles. The disease lasts

some days, is caused by irritation, and must be treated by preventing irritation of the tongue, and brushing with borax and camomile. *Michael.*

Eisenmenger (Wien).—*On Plexiform Sarcomata of the Hard and Soft Palate, and their relations to other Tumours of these Regions.* "Deutsche Zeitschrift für Chirurgie," Band 39, IIeft 1 and 2.

DESCRIPTION of some cases, with operations. Chiefly of surgical interest.

Michael.

Lapalle.—*Perforation of the Right Anterior Palatine Pillar.* "Journ. de Méd. Bordeaux," Nov. 17, 1894.

THIS perforation was noted in a young woman, twenty-two years of age. Since puberty she had frequent tonsillitis, with suppuration. The perforation was half a centimètre long. The mucous membrane was healthy. *A. Cartaz.*

Boyd.—*A Tonsillotome.* "Brit. Med. Journ.," June 16, 1894.

THIS instrument resembles Mackenzie's in general appearance, strength of build, etc., but has a ring knife (like Mathieu's instrument), worked by a trigger. With one hand it can be worked, leaving the other free to apply counter-pressure outside. By means of the trigger the forefinger draws the ring-knife home, and the tonsil is cut off against the chisel edge of the fixed blade. *Wm. Robertson.*

Moritz (Manchester).—*Pyoktanin in Malignant Growths (Tonsils).* "Brit. Med. Journ.," Nov. 24, 1893.

THE drug was employed by injection in a case of sarcoma of the tonsil and upper jaw in a woman, aged forty-nine, who first noticed a swelling of the right tonsil eighteen months before. There was a second tumour, the size of a plum, in the roof of the mouth, and a third one in the left parotid region.

In April last Dr. Moritz began to inject three times weekly a saturated solution of yellow pyoktanin (auramin) into the tumours; about five milligrammes were injected into each tumour at a time. Since then the tumour of the hard palate had entirely disappeared and the tonsillar tumour had diminished to half its size. Dr. Milligan, who had also observed the patient during the course of treatment, was able to confirm Dr. Moritz's statement. *Wm. Robertson.*

Spillmann and Etienne, G.—*Late Hereditary Syphilis.* "Revue Méd. de l'Est," Jan. 1, 1895.

IN this pamphlet are recorded two cases of hereditary syphilis of the throat. In the first case, that of a man nineteen years of age, corneal ulcers, chronic arthritis, and angina had occurred in childhood, and later ulcerations of the soft palate, ending in perforation, and cured by mercurial injections. In the second case, that of a man thirty-eight years old, the first manifestations of syphilis appeared at eighteen years of age in ulcerations of the throat, gradual destruction of the soft palate, and complete adhesions of the palate to the pharyngeal walls. They tried injections of tuberculin without success. The lesions were due to late hereditary syphilis. *A. Cartaz.*

Lichtwitz.—*Excision of Hypertrophied Tonsils with Galvano-Cantery Loop.* "Journ. de Med. Bordeaux," Dec. 23, 1894.

THE author advocates, as the best and safest method of excision, the amputation of hypertrophied tonsils with the electric loop. He uses a steel loop of one to three millimètres diameter. The electric current is furnished by a battery of accumulators. By means of a rheostat the current is graduated in such a way that it does

not overstep the degree of incandescence, eight or ten ampères. By this means the largest tonsils are excised in two or four seconds, and the operation has never been accompanied by fever or other complications in a total of four hundred cases.

A. Cartaz.

Lange (Strasburg).—*Tonsillar Calculus*. “*Deutsche Zeitschr. für Chirurgie*,” Band 39, Heft 1 and 2.

IN a patient, thirty-two years old, who complained of difficulty in swallowing of a year's duration, a tumour the size of an apple was found in the position of the left tonsil. On probing, it was hard and stony. It was covered with mucous membrane, except in the centre. Incision; removal; cure. The larger stone weighed twenty-four grammes, the smaller four grammes. They were rough, of yellowish colour, and consisted of phosphates and carbonates. No distinct centre could be found. The author concludes by a careful review of the literature of tonsillar calculus.

Michael.

Heller (Nürnberg).—*Pharyngeal Treatment*. “*Münchener Med. Woch.*,” 1894, No. 44.

THE author says that in all acute infectious diseases the pharynx is the first place of infection. In all such diseases irrigation of the naso-pharynx ought, therefore, to be performed.

Michael.

Ackermann.—*Pharyngo-Mycosis Leptothricia*. Greifswalder Medicinischer Verein, Meeting, Feb. 3, 1894.

REVIEW of the publications upon this disease, and short report of some cases observed.

Michael.

Garel.—*Pharyngitis symptomatic of Diabetes or Albuminuria*. Congrès Français de Méd. Internat., Lyons, Oct. 27, 1894.

THE author describes a mild form of pharyngitis characterized by slight difficulty in deglutition, sensation of pressure and dryness in the throat, and secretion of mucus. The pharynx, faucial pillars, and posterior wall were covered by mucus, and red. In these cases they frequently found albumen or sugar in the urine. A report of twenty-one cases is given, ten with diabetes, eleven with albuminuria.

A. Cartaz.

Kreche (München).—*Special Form of Syphilitic Granulation Tumour in the Pharynx*. “*Münchener Med. Woch.*,” 1894, No. 47.

IN a patient, twenty-four years old, suffering from difficulty in swallowing and dyspnoea, the author found some large tumours in the pharynx of the size of an egg. The author believed them to be cancer, but as the patient had been syphilitic he gave iodide. The tumours disappeared in a short time, and the patient was cured.

Michael.

Gerber.—Verein für Wissenschaftliche Heilk. in Königsberg-i-Pr. Meeting of May 21, 1894.

THE author showed—1. A patient, fifteen years old, in whom he had treated a large naso-pharyngeal polypus by electrolysis.

2. A patient, forty-two years old, with a large tumour of the naso-pharynx, which had caused difficulty in swallowing, pains in neck, and paresis and anæsthesia of left arm. Microscopic examination proved this to be sarcomatous. Improvement on treatment by electrolysis.

3. A patient, seventeen years old, with adhesion of velum and root of tongue

o the posterior wall of pharynx, leaving only a small circular opening. Patient says this came on after diphtheria. No history of syphilis. Treatment by galvano-cautery. Improvement.

4. A patient, twelve years old, with laryngeal tuberculosis.
5. A patient, fourteen years old, with laryngeal symptoms of hereditary syphilis.
6. A case of unilateral rhinitis fibrinosa. Loeffler's bacillus was present.
7. A woman with nose deformed by a great mass of polypus.
8. A patient, sixteen years old, with "aproxia nasalis." *Michael.*

Carstens (Leipzig).—*New Knife for opening Retro-Pharyngeal Abscesses.*
"Jahresschr. für Kinderheilkunde," Band 38, Heft 2 and 3.

A COVERED knife. (This was introduced and used by Krukenberg fifty years ago).
Michael.

Kelling (Dresden). — *Diagnosis of deep-seated Œsophageal Diverticula.*
"Münchener Med. Woch.," 1894, No. 47.

The author describes minutely some methods to assist the diagnosis of deep diverticula by introducing curved sounds, or by filling the diverticulum with water. The details must be read in the original.
Michael.

Egloff. — *Removal of Foreign Bodies from the Œsophagus, especially by Œsophagotomia Externa.* "Beitr. zur Klin. Chir.," 1894, No. 1.

THE author records six cases operated upon by Kronlein. Five of them were cured. The sixth case died from hæmorrhage of the arteria thyroidea inf. dextra, which was eroded by the foreign body. The author also mentions ten cases in which the foreign body was removed *per vias naturales*, and six in which it left the body spontaneously by the anus.
Michael.

LARYNX.

Milligan (Manchester).—*Teachers' Nodes.* "Brit. Med. Journ.," Nov. 3, 1894.

THESE occurred in a Board school teacher aged twenty-one, and had been causing loss of voice for two years. Two symmetrically-placed nodules, about the size of millet seeds, were seen at the junction of the anterior with the middle thirds of both vocal cords. They projected towards the middle line and interfered with phonation.
Wm. Robertson.

Huchard.—*Treatment of Stridulous Laryngitis.* "Journal de Praticiens," Dec. 1, 1894.

THE author believes that spasm is the prominent factor of the grave symptoms of stridulous laryngitis. He prescribes large doses of bromide of potassium (one to four grammes) in children, according to the age. These large doses frequently prevent the necessity of surgical intervention.
A. Cartaz.

Rethi (Wien).—*Œdematous Fibroma arising from the Anterior Surface of the Posterior Laryngeal Wall.* "Wiener Med. Presse," 1894, No. 18.

A PATIENT, fifty-three years old, never having had any disease in his throat, suddenly suffered for eight days from spasmodic cough and dyspnoea. The larynx sometimes produced a ventriloquial noise. The laryngoscope showed a yellowish,

transparent tumour, the size of a nut, seated on the anterior part of the posterior laryngeal wall. During respiration the tumour was sub-glottic, during phonation it was projected into the supra-glottic space. Operation was performed by the galvano-caustic wire. The microscopical examination showed it to be an œdematous fibroma. *Michael.*

Bremer (Berens).—*Treatment of Inflammatory Swellings of the Glottis.* "Therap. Monats.," 1894, No. 9.

THE author has applied in some cases of diphtheritic laryngeal stenosis collodium cantharidatum to the anterior surface of the neck with good result. *Michael.*

Lunin.—*On Laryngitis Phlegmonosa.* Aerztlicher Verein in St. Petersburg, Meeting, Jan. 10, 1894.

A PATIENT, forty-nine years old, suddenly attacked with dyspnœa, died before tracheotomy could be performed. The *post-mortem* examination showed redness and œdematous swelling of the glottis. On incision there was a discharge of sero-purulent fluid. Redness and swelling of the pharyngeal mucous membrane were also present. [It seems to be a case of primary erysipelas.—*Rep.*] *Michael.*

Lohoff (Laer).—*Tracheotomy in Laryngeal Tuberculosis.* Inaugural Dissertation, Würzburg, 1894.

REPORT on five cases.

Heryng (Warsaw).—*Further Contributions to the Surgical Treatment of Laryngeal Phthisis, founded on 270 observations.* "Klin. Zeit.," 1894, Heft 2.

THE author reports eighteen new cases of laryngeal phthisis. He concludes that in many cases tubercular ulcers and infiltrations in all parts of the larynx can be cured by surgical treatment. The prognosis is better in unilateral than bilateral affections. Of his cases two have remained well for five years, six for four years, three for three years, five for two years, and four for one year. He has observed spontaneous cure in fourteen out of three thousand cases. These, however, do not affect the present question, as they were all slight cases in elderly patients. Cases with dysphagia and much tissue-destruction seldom heal spontaneously or by climatic treatment. The result of surgical treatment is influenced by the following conditions: (1) the local condition; (2) the state of general health of patient, including the state of the lungs, the age, constitution, and character of the patient; (3) the ability of the surgeon to remove all affected tissue; (4) the after-treatment. Severe hæmorrhage occurred in only two cases. It can be avoided by using electrolysis or galvano-cautery instead of curetting. Anæsthesia is to be obtained by the use of cocaine. Slight cases may be treated by brushing with lactic acid.

Michael.

Koch (Luxembourg).—*A Case of Sub-glottic Polypus.* "Ann. des Mal. de l'Oreille, etc.," June, 1894.

THE neoplasm was attached beneath the left vocal cord, and during forced expiration passed between the two cords. After several unsuccessful attempts Dr. Koch succeeded in seizing the tumour, which was of considerable size, with the cutting forceps of Scheinmann; the size and hardness of the polypus prevented him from extracting it. However, it had evidently been crushed with the forceps, for a few days afterwards it was expectorated by the patient, who made a good recovery.

Joal.

Tschudi (Wien).—*Sarcoma of Larynx*. "Wien. Klin. Woch.," 1894, No. 8.

THE author showed a patient with a sarcomatous tumour involving the right ventricular band and arytenoid cartilage.

Michael.

Michael and Fraenkel.—Aerztlicher Verein in Hamburg, Oct. 20, 1894.

IVAN MICHAEL showed specimens from a case observed by reporter.

A patient, fifty-five years old, complained of hoarseness and dyspnoea. There were swollen glands in the neck on the left side, dull note over sternum and left side of thorax, displacement of heart to eighth intercostal space in left axillary line. Laryngoscopic examination showed paralysis of left recurrent nerve. The state of the cervical glands made the diagnosis of mediastinal tumour certain, although the pulsation of the tumour gave rise to a suspicion of aneurism. Death from cachexia a year later. The *post-mortem* examination showed the left lung, left bronchus, bronchial glands, right jugular vein and vena anonyma filled with sarcomatous tumour. The jugular vein was changed into a sarcomatous mass, with the lumen obliterated. The primary tumour filled the whole anterior mediastinum. Both recurrents were destroyed by the tumour. During the last weeks of his life it had been impossible to examine the patient laryngoscopically, but the stridor showed that the right recurrent nerve must also be involved.

EUGEN FRAENKEL showed specimens of diphtheria bacillus from cases of diphtheria of the bronchi, œsophagus, and stomach. He recommends Dyeke's method of bacteriological examination in diphtheritic cases.

Michael.

Fraenkel.—*Cancer of the Larynx*. Soc. Anat., Paris, Nov. 9, 1894.

A MAN, fifty-three years old, had a large ulcerated tumour of the neck. Emaciation, dysphagia, and repeated vomiting were present, and death occurred with asphyctic symptoms. At the necropsy a large mass of cervical cancerous glands were found, and cancer of the larynx limited to a small part of the mucous membrane.

A. Cartaz.

Dansac.—*Primary Epithelioma of the Glottis*. "Ann. des. Mal. de l'Oreille," etc., Aug., 1894.

A HISTOLOGICAL study in which the author distinguishes (1) a dermoid pavement epithelioma of the glottic mucous membrane; (2) an epithelioma of a superficial glandular form, sprouting carcinoma, and local; (3) a deep glandular epithelioma or carcinoma *en nappe*.

Joal.

Leseigneur, Maximilien.—*Studies on Laryngotomy*. Thèse de Paris, 1894.

CRITICAL review on the indications of laryngotomy in various cases of partial or total occlusion of the respiratory tract (foreign bodies, benign or malignant tumours, cicatricial stenoses, hypertrophic laryngitis, etc.), and on the preference in such cases of that operation to endo-laryngeal methods. The author reviews the principal operatory proceedings (Malgaigne, Follin, Billroth), and he concludes that, except in special indications, the best procedure is vertical, partial or total, laryngotomy. Of three hundred and sixty-two operations the percentage of mortality was 4·69 per cent.

A. Cartaz.

Kassowitz (Wien).—*Glottic Spasm and Tetany in Children*. "Wiener Med. Woch.," 1894, No. 23.

REPORT on one hundred and seventy-two cases to prove that tetany and glottic spasm in children always depends on acute rachitis. The treatment must in the first place be of the rachitic diathesis, *i.e.*, it must consist in giving phosphorus.

Michael.

Milligan (Manchester).—*A Case of Complete Abductor Paralysis of the Left Vocal Cord.* "Brit. Med. Journ.," Nov. 3, 1894.

THIS occurred in a man, aged forty-three, who suffered from an attack of syphilis thirteen years previously. The paralysis was of tabetic origin, and the author drew attention to the fact that paralysis of abductor movements of one vocal cord was at times one of the earliest symptoms of *tabes dorsalis*. Dr. Milligan also refers to a case of a man, aged seventy-seven, suffering from malignant disease of the œsophagus, with laryngeal complications.

Wm. Robertson.

Boulay and Mendel.—*Laryngeal Paralysis in Dothienteria.* "Arch. Gén. de Med.," Dec., 1894.

THIS complication is rare (the authors have collected only seventeen cases, one being original), and appears specially during the first days of the disease, but more rarely during convalescence. The forms of the paralysis are (1) paralysis of the dilators (six cases—in five tracheotomy was necessary); (2) paralysis of the constrictors (four cases); (3) paralysis of one recurrent nerve (five cases); (4) paralysis of both recurrent nerves (two cases).

A. Cartaz.

Klemperer.—*Bilateral Posticus Paralysis.* Unterelsässischer Aerzterverein in Strassburg, Meeting, Oct. 27, 1894.

A PATIENT, fifty-three years old, suddenly had an attack of suffocation, lasting two hours. Four days later he had a second attack. The laryngoscope showed the glottis to be nearly closed during inspiration. Bromides and cocaine were given without effect. Tracheotomy was performed. Eight days later the patient could leave the hospital, wearing a canula. Now the left vocal cord is absolutely immobile, and the right vocal cord makes little excursions. No cause can be found for the paralysis. The author remarks that unilateral paralysis of one vagus may paralyze both postici; unilateral paralysis of one recurrent can only paralyze one posticus. Spasmodic affection can be excluded in this case. Prognosis and treatment is impossible in a case the origin of which is absolutely obscure.

Michael.

Koschier (Wien).—*Lordosis of the Vertebrae Colli, and Decubital Ulcers on Posterior Part of Cricoid Cartilage; Laryngeal Stenosis.* "Wiener Med. Woch.," 1894, Nos. 35 and 36.

THESE communications are of special interest, as laryngeal stenosis due to pressure of the vertebrae (in lordosis) on the larynx has not been described before.

1. A patient, sixty-five years old, had suffered for five years from difficulty in swallowing and breathing. There was well-marked lordosis of the cervical and kyphosis of lower parts of vertebral column. Both arytenoids were swollen, and moved very little. No tumour could be seen. Tracheotomy. Some days later, owing to difficulty of swallowing, patient had to be fed through a soft rubber tube. Death from pneumonia. The *post-mortem* showed loss of substance in posterior wall of pharynx, and in a corresponding position a loss of substance in posterior wall of larynx, covered with pus and necrotic tissue.

2. A patient, fifty-eight years old, died of phthisis pulmonalis. At the *post-mortem* examination were found lordosis of cervical vertebrae, loss of substance in the posterior wall of pharynx, and ulcers on posterior wall of larynx.

3. A patient, sixty years old, with dyspnoea for some weeks. In the pharynx was seen a semi-globular swelling, due to lordosis of the vertebral column, concealing nearly the whole of the larynx from view. Tracheotomy. Death a few days later from bronchitis. *Post-mortem* showed œdema of larynx, compression of sinus pyriformis. The mucous membrane was replaced by an irregularly folded cicatricial

mass : glottis stenosed. A sagittal section of the larynx shows that the posterior part of the cricoid cartilage is gone—only small sequestra being found—and has been replaced by connective tissue.

4. In a patient, twenty-nine years old, with lordosis caused by a large lipoma of the neck, attacks of dyspnœa arose. These could always be relieved by traction of the head.

These cases are to be regarded as decubitus. With the destruction of the cartilage the cause of the decubitus disappears. The wound heals by cicatrization, with resulting stenosis of the larynx. *Michael.*

Glisson (Salop).—*Tracheotomy for Foreign Body in the Larynx.* "Brit. Med. Journ." July 14, 1894.

A BOY, aged nine years, had an ordinary sewing needle in his mouth, and while trying to raise a younger child the needle disappeared down his throat. The child was seen the following day, but the symptoms were not urgent, complaining only of pricking in the trachea. A minute elevation could be detected (externally?) between the second and third rings, which disappeared on being placed on his back. The following day tracheotomy was performed, and the needle, found firmly imbedded above the tube, eye downwards, was extracted. Recovery.

Wm. Robertson.

Hauwerk.—Verein für Wissenschaftliche Heilk. in Königsberg, Meeting of 30th April, 1894.

THE author showed the larynx of a child that had died of asphyxia due to a lumbricus getting into the glottis during vomiting. *Michael.*

Wiesmann (Herisau).—*Shoe-Nail extracted from the Larynx of a ten months old Girl.* "Correspl. für Schweitzer Aertze," 1894, No. 19.

IN a child, which had been dyspnœic for thirteen weeks, the author could feel a hard body in the pharynx. Tracheotomy had to be performed to relieve asphyxia. Thereupon the author removed a large shoe-nail from the child's larynx. The father was a shoemaker. Pneumonia; death. *Michael.*

Bollinger.—*Suffocation by a Cherry-Stone.* Aerztlicher Verein München, Mar. 23, 1894.

A GIRL, five years old, got a cherry-stone in her throat. The child became dyspnœic. An emetic was given with prompt effect. The dyspnœa ceased, and the foreign body seemed to have been expelled. Thirty-six hours later sudden death occurred. The *post-mortem* examination showed the stone to be over the bifurcation of the trachea. *Michael.*

Baildon (Southport).—*Case of Foreign Body in the Trachea; Tracheotomy and Successful Removal.* "Brit. Med. Journ.," June 30, 1894.

THE accident occurred in a girl, aged six, with a history of having had a piece of lead-pencil in her mouth, which had disappeared, and the child had nearly suffocated. On admission the patient was cyanosed, breathing difficult and stertorous, cough, etc. On inspecting the chest, the right intercostal spaces were drawn, which side was also dull to percussion, and breath sounds absent. Diagnosis, foreign body in right bronchus. After tracheotomy, and during a spasm of the glottis, a black body was forcibly shot up into the wound. This was seized and found to be the pencil referred to, and one-eighth inch long, ragged at one end, with the sharpened end upwards. After an attack of pneumonia in the left lung, patient recovered. *Wm. Robertson.*

Sennycy (Budapest).—*Foreign Body Seventy-two Days in Trachea; Recovery.*
 "Archiv für Kinderheilk.," Band 17, Heft 5, 6.

A CHILD, six years old, drew a piece of wood into the respiratory passages. This caused at first a suffocative attack, lasting only a few minutes, and afterwards difficulty in breathing, specially at night. When brought into the hospital, the child was suffering from marked dyspnœa, and had a rough cough. The lungs were found normal on percussion and auscultation. The dyspnœa increased so as to produce cyanosis. Tracheotomy rapidly performed gave great relief, showing that the foreign body must be situated in the upper parts of the trachea. It could not be seen on laryngoscopical examination. Fourteen days later bronchitis, with fever and discharge of pus, came on. This was recovered from in a month. The tracheal canula was then withdrawn, and the wound healed in a few days. Some days later—*i.e.*, seventy-two days after onset of illness—the child had a severe attack of coughing, lasting fifteen minutes, and ending with the discharge of much pus. In the pus was found a cylindrical piece of wood, eleven millimètres long by eight millimètres broad, of the colour of mucous membrane, and quite smooth.

Michael.

Rokitansky (Innsbruck).—*Asthma Bronchiale: a Clinical Lecture.* "Allg. Wiener Med. Zeitung," 1894, Nos. 47 and 48.

REVIEW of the pathology and therapy of this disease for students. *Michael.*

Koch, Paul (Luxembourg).—*Bronchitis Fibrinosa Chronica.* "Internat. Klinische Rundschau," 1894, No. 42.

1. A PATIENT, aged thirty, ill for two years. Every third day he has an attack of oppression and dyspnœa, ending in the discharge of fibrinous casts of the bronchi, the larger being hollow, but the smaller solid. At first iodide of potassium gave some relief, but now no treatment has any effect.

2. A patient, sixty-three years old, has suffered for thirty years from the same disease. The sputum is reddish.

In both cases the disease is unilateral, no cause is known, and no treatment has any effect.

Michael.

THYROID, NECK, & C.

Hurthle.—*Contribution to the Knowledge of the Secretion of the Thyroid Gland.*
 "Pflüger's Archiv für die gesammte Physiologie," Band 56.

THE colloid substance in the follicles is produced by the protoplasm of the epithelial cells. The secretion of the gland consists in the formation of colloid matter. The production can be increased artificially by removal of the greater part of the gland, and also by icterus.

Michael.

Eulenberg (Berlin).—*Graves' Disease and Goître.* "Deutsche Med. Woch.," 1894, No. 49.

THE author concludes that (1) changes are produced in the chemical constitution of the blood by the secretion of a specific watery matter by the follicles of the goitrous gland. This secretion is due not to nervous influence, but is stimulated directly by the blood. (2) In Graves' disease the amount of secretion of the gland is increased, and has a definite toxic effect; further, as this secretion is absorbed

directly into the veins its toxic effects are the more readily produced. (3) Qualitative and quantitative changes are due to increased arterial supply, and to the altered condition of the blood. This is proved by the pathological state of the vessels, and by the relation of the disease to anæmia, chlorosis, and to infectious diseases, etc. (4) Treatment must aim at improving the blood-condition by tonics, and in grave cases by removal of the affected part of the gland. *Michael.*

Glan (Abbazia).—*Climatic Treatment of Graves' Disease.* "Internat. Klinische Rundschau," 1894, No. 42.

FROM observation of five cases treated in Abbazia, the author recommends a maritime climate for the treatment of Graves' disease. *Michael.*

Lemke (Hamburg).—*Surgical Treatment of Graves' Disease.* "Deutsche Med. Woch.," 1894, No. 42.

CRITICAL article on Buschan's paper. Buschan considers that surgical treatment cannot secure complete cure. The author, on the other hand, relates five cases, already published (see report in this Journal), and three not yet published, in which he removed the greater part of the goitre, obtaining very satisfactory results both as regards the general condition and the local cosmetic effect. *Michael.*

Spicer, Scanes (London).—*Graves' Disease and Nasal Polypus.* "Brit. Med. Journ.," Nov. 17, 1894.

THE author refers to the case of a young woman sent to him for the removal of nasal growths. The thyroid gland presented the usual electric thrill and pulsations. There was tachycardia (140), and fine tremor of arms. The girl was further of marked neurotic type. He had removed some of the polypi, and since then the patient had improved. It was pointed out that both conditions were discovered together three years ago, so that it could not be said that the Graves' disease was due to nasal operations, and it was suggested that the two conditions were more than a coincidence. Cure of the symptoms of Graves' disease had followed the treatment of the nasal polypi in three cases. Mr. G. Stoker referred to the case of a man, aged thirty-three, who had a soft goitre, together with intra-nasal polypi, and whose goitre had resisted all kinds of treatment until the galvano-cautery was applied to the polypi. The treatment being continued, the goitre lessened, and in two months disappeared.

Wm. Robertson.

Ballet and Enriquez.—*Experimental Goitre after Injections of Thyroid Extract.* "Bull. Soc. Méd. des Hôp.," Nov. 16, 1894.

THE authors have injected in a dog glycerine extract of thyroid juice. During fourteen days the injections were regularly from four to fifteen cubic centimètres of extract. After the first injections the dog had diarrhoea, fever, tachycardia and tremors of the limbs. Little by little the thyroid gland was observed to enlarge, especially upon the right side. The injections were relaxed, and all symptoms, local and general, disappeared. The thyroid gland recovered its primary volume. After a second series of injections the same hypertrophy resulted. *A. Cartaz.*

Bruns (Tübingen).—*Treatment of Goitre by Feeding with Thyroid Gland.* "Deutsche Med. Woch.," 1894, No. 41.

THE author has tried this treatment in twelve cases of parenchymatous goitre, using fresh thyroids of calves in doses of five to ten grammes. It was not tried in cystic goitres, as in them no result was to be expected. Four cases, between the ages of four and twelve years, were completely cured. In a patient fourteen years old the circumference of the neck decreased by seven centimètres in four weeks. In another,

sixty years old, with a goitre on the left side the size of a fist, and compressing the trachea so as to cause dyspnœa, the circumference of the neck decreased by five centimètres in four weeks, and the dyspnœa disappeared. In three cases there was no improvement. In one case symptoms of intoxication appeared, viz., headache, loss of appetite, nausea, loss of weight (ten kilogrammes). In all other cases the weight decreased by a half to one kilogramme. The author concludes that in some cases goitre can be cured by the use of thyroid gland. *Michael.*

Brunet.—*Parenchymatous Goitre treated by Iodine Injections.* "Journ. de Méd. Bordeaux," Nov. 17, 1894.

RELATION of a case of thyroid hypertrophy in a girl thirteen years of age, treated for a year and a half by interstitial injections of iodine tincture. Complete cure. *A. Cartaz.*

Wherry (Cambridge).—*Partial Thyroidectomy for Goitre.* "Brit. Med. Journ.," June 2, 1894.

THE goitre occurred in a youth, aged fifteen, weighing fourteen stone, and suffering from asthma. After a severe attack of dyspnœa, rendering the patient unconscious, the trachea was exposed without an anæsthetic, and the middle lobes and part of each ala of the thyroid had to be removed, leaving the flattened windpipe exposed at the bottom of the wound. Tracheitis setting in, tracheotomy was performed, the patient ultimately recovering. During convalescence the patient was childish. Thyroid tablets were given thrice daily, with the result that he lost four stone in weight, and became rational. *Wm. Robertson.*

Du Boulhet.—*Exothyropexy—Death by Infectious Pneumonia.* Soc. Anat., Paris, Nov. 9, 1894.

RELATION of a case of thyroid tumour with compression of the trachea. Asphyctic symptoms supervening, the surgeon practised exothyropexy, notwithstanding broncho-pulmonary manifestations. Death occurred on the eleventh day from infectious pneumonia. The trachea was flattened by the goitre and the two recurrent nerves had been ligatured with the pedicle of tumour. *A. Cartaz.*

Marsh, F.—*The Treatment of Bronchocele.* "Birmingham Med. Rev.," Nov., 1894.

THE article is based on five cases which were operated on for urgent pressure symptoms. The author discusses the latest views—pathological, surgical, and medical—and expresses his view of the requirements due to the operation as being "a resection of the isthmus or central portion with sufficient of the adjoining parts of the lateral lobes to relieve urgent pressure symptoms." He also advocates operation for its cosmetic effect.

The ages and sexes of his patients were—a boy aged fifteen, a girl aged seventeen, two men each aged twenty-one, and the fifth a woman of twenty. The first case was of rapid growth, only three months, and made a rapid recovery. The second was of six months' growth, and required tracheotomy at the time of operation, and the tube was worn for some months; the remainder of the gland atrophied. The third was of four months' growth, the right lobe dipped down behind the sternum; this and the isthmus were removed, the remainder returned to its normal size in twenty days. The fourth was a growth of five months—this case also required tracheotomy, and a portion of the right lobe, as large as a fist, was shelled out from behind the sternum; this, together with the right lobe and a portion of the left, were removed. On the third day the patient exhibited all the symptoms due to a large dose of thyroid extract; this proved to be due to some

pent-up colloid, all symptoms disappearing on its removal. The fifth was a tumour of fourteen months' duration with recent increase; the right lobe, isthmus, and part of the left were removed; hæmorrhage was troublesome. The parts removed weighed sixteen and a half ounces.

R. Lake.

Nielsen (Copenhagen).—*Case of Myxœdema cured by Feeding with Thyroid Gland. Hypothesis regarding Action of the Gland.* "Monats. für prakt. Dermatologie," 1893, No. 9.

A PATIENT, thirty-three years old, showing all the signs of myxœdema, was cured after a short treatment with thyroid gland. The treatment must be continued during the rest of life.

Michael.

Schmidt, Joh. (Frankfurt-a-M.).—*On the Treatment of Myxœdema.* "Deutsche Med. Woch.," 1894, No. 42.

THE author reports (Frankfurter Aertzlicher Verein) on the results of treatment of myxœdema by thyroid gland, and shows a case of infantile myxœdema in a patient twenty years old, with dwarf stature. All the symptoms had improved after four doses, but then the patient took an eclamptic fit, probably due to cumulative effect of the medicament. The father would allow no further treatment. Two photographs show the high degree of improvement.

Michael.

McIlwraith, C. H. (London).—*Notes on a Case of Accessory Thyroid Gland projecting into the Mouth.* "Brit. Med. Journ.," Dec. 1, 1894.

SITUATED at the base of the tongue, close to the position of the foramen cæcum, was a tumour about the size of a small walnut. The larger half of it was to the right side. It felt semi-elastic, and was immovable on the deep tissues of the tongue. It pressed back on the epiglottis, and when the tongue was pulled out it almost touched the base of the uvula and soft palate. The thyroid was normal. It occurred in a well-nourished girl, aged seventeen years, gave no trouble, and was noticed two months previously. Under chloroform, Dr. Bond cut through the mucosa, and the tumour fixed with a tenaculum was removed with a raspatory and a polypus snare. Bleeding was profuse but checked by pressure of a finger on the base of the tongue. The tumour presented the characters of the thyroid gland structure. Such tumours are frequently met with in this region and originate in connection with the lingual duct, a structure of embryonic significance.

In the embryo a diverticulum takes place from the anterior wall of the pharynx, forming what is known as the thyro-glossal duct, and about this the thyroid gland is formed. The duct opens at the base of the tongue at a spot in the adult represented by the foramen cæcum, and passing downwards, bifurcates to form the isthmus of the thyroid, the branches uniting with the embryonic gland to form the lateral lobes. As development goes on, the hyoid bone is formed, and in its growth divides the duct into an upper (lingual) and a lower (thyroid) portion. Both of these are obliterated as a rule when development is complete, but occasionally either of these two portions persists, closed at both ends. It is in connection with this lingual portion of the thyro-glossal duct that a tumour such as above noted is developed. [A similar tumour was referred to in the Journal of last year.—REP.]

Wm. Robertson.

Leydel (Königsberg).—*On Hypertrophy of the Thymus Gland in Medico-Legal Post-Mortem Examinations.* "Vierteljahresschrift für Gesichtlich. Med.," 1894, No. 2.

THE author does not believe that the thymus can produce sudden death by compression of the trachea, for in such cases no evidence of compression is found,

and tracheotomy never relieves them. But most probably these cases of death are caused by compression of the recurrent nerves by the suddenly enlarged gland.

Michael.

Haeckel (Jena).—*Cysts of the Ductus Thyroglossus*. "Langenbech's Archiv," Band 48, Heft 3.

OF surgical and embryological interest.

Michael.

Lucy (Plymouth).—*Persistent Thyro-Glossal Duct*. "Brit. Med. Journ.," June 23, 1894.

THIS occurred in a boy, aged twelve, who had been rejected by army surgeons on account of a sinus in the neck, from which discharged matter like white of egg. Seven years earlier a lump existed there, and was incised, leaving the sinus. This admitted a probe one and a quarter inches upwards, and was represented outwardly by the feeling of a cord, which became pulled upon during deglutition. The thyroid was enlarged. The cord was dissected out up to the thyro-hyoid membrane, and found to end in the periosteum over hyoid bone. The cord was three-sixteenths of an inch in diameter, and one inch long; canal a quarter of an inch long. The wound broke down, necessitating removal of further tissue, after which permanent healing took place.

Wm. Robertson.

Bowlby, A. A. (London).—*Epitheliomatous Cyst of the Neck*. "Brit. Med. Journ.," Nov. 24, 1894.

THE author's remarks referred to such a cyst, removed after death from a man aged fifty-eight, which occupied both triangles of the neck and fluctuated as an abscess. Definite hard lumps could be felt in the cyst, and led to the view of its being a cystic new growth. No primary tumour was found in the mouth or larynx, and no symptoms pointed to the cesophagus. After death no primary tumour was found. The wall of the cyst was a quarter of an inch thick and of squamous-celled carcinomatous structure. The lymphatic glands of the opposite side and of the thorax were free from lesions. The growth itself infiltrated the cords of the cervical and branchial plexuses, and lay beneath the sterno-mastoid. The author believed that such cases arose in a branchial cleft. The disease suggested an origin in a cyst rather than the formation of a cyst by the breaking down of a carcinomatous lymphatic gland. Mr. F. C. Wallis exhibited a similar specimen. The glands were affected below the growth. There was no primary disease discoverable during life. The growth subsequently fungated through the skin as a cauliflower projection and the patient died. Dr. Snow, citing a case of fluctuating glandular swellings in the neck, where a careful search had shown that a small tumour of carcinomatous kind had been removed from the lip, thought that many cases of carcinomatous cysts might have such a secondary origin. Dr. Bland Sutton remarked that German writers had named such malignant cysts branchiogenous carcinoma, but he did not regard them as such. They appeared too late in life, and he supposed that a primary carcinoma, situated in some out-of-the-way position, was their source.

Wm. Robertson.

EARS.

Blaxall (London).—*A Bacteriological Investigation of the Suppurative Ear Discharge, occurring as a Complication of Scarlet Fever.* "Brit. Med. Journ.," July 21, 1894.

THIS important investigation is treated by the author in an exhaustive manner, and is introduced by brief references to the more important researches of other observers in this field. That which relates to the scarlatinal process *per se* is first dealt with; next, that which deals with the bacteriology of otitis media, acute and chronic, and thirdly, that which relates to the combination of the two processes. As regards the bacteriology of scarlet fever, the author concludes that the streptococcus pyogenes is the organism that plays the most important part, at any rate in regard to the secondary infections of this disease. Under the bacteriology of otitis media, Zaufal's division of otitis into three forms—viz., (1) that due to pneumococci, (2) that due to staphylococci—aureus, albus, and cereus albus, (3) that due to streptococci—is instanced, and it is pointed out that Zaufal was the first to assert the importance of the streptococcus pyogenes in the complications of otitis media. Kanthack is referred to as having found most abundantly the diplococcus pneumoniae in acute otitis and mastoid suppurations—in chronic cases never but pathogenic staphylococci. To this organism—viz., the diplococcus pneumoniae—the majority of authors assigned the first place in the etiology of acute otitis. The next place, more especially as causative of the complications that follow otitis media, is assigned to the streptococcus pyogenes.

The author's observations on the bacteriology of otitis in scarlatina is based on the results obtained from an examination of two hundred and eighty-seven cases of scarlet fever. Out of these thirty-six suffered from otitis media, occurring mostly from the twentieth to the thirtieth day after the onset of the disease. Of these fourteen were examined bacteriologically, four of them twice at different periods. The pus was aspirated out of the middle ear through the aperture in the membrane with all due precautions. The results obtained are clearly tabulated, and it is shown that the shorter the interval between the rupture of the membrane and the examination the more the pyogenic cocci predominate over rod forms. The various forms were found as follows:—

Streptococcus pyogenes	12 times.
Bacillus striatus albus	9 ..
Staphylococcus pyogenes albus	8 ..
" " aureus	5 ..
Micrococcus albus liquifaciens	3 ..
Bacillus acid lact.	2 ..
" subtilis	1 ..
" pyocyaneus.....	1 ..
Tubercle bacillus	1 ..
Yeasts	6 ..
Sarcinae	3 ..
Moulds	4 ..

The author never once succeeded in finding the diplococcus pneumoniae, a circumstance which might be due to the prevalence of pyogenic cocci hindering its growth, or because the diplococcus pneumoniae does not play such an important part in the etiology of the otitis media of scarlatina. The author alludes to the theory advanced by some that the streptococcus pyogenes is an attenuated form of

the diplococcus pneumoniæ. He, however, took every care to discover the diplococcus, but without success. Mention is made of the two forms of the streptococcus, namely, longus and brevis. The latter was not met with. Moos only once met with the diplococcus in scarlet fever, and in this case associated with cancer, whereas most refer to this as being present only in acute cases. The bacillus striatus albus, isolated nine times, resembles one found in normal nasal secretions. The bacillus acid lact., occurring in patients whose staple article of diet is milk, is interesting. The conclusions of the author are—

1. That the organism most potent in the etiology of the otitis media of scarlatina is the streptococcus pyogenes.

2. That the less chance there is of contamination from the outer air through the external orifice the more the pyogenic cocci predominate over rod forms, but that, prior to perforation of the membrane, the occurrence of such organisms is not precluded, since they may ascend from the mouth and air passages.

3. That, next to the streptococcus, the most important organisms are the staphylococci albus and aureus.

4. That apparently the diplococcus pneumoniæ of Fraenkel or the bacillus pneumoniæ of Friedlander do not play such an important part in the otitis media of scarlet fever as in that due to other causes.

Wm. Robertson.

Cheatle (London).—*Aural Auscultation Tube*. "Brit. Med. Journ.," Sept. 22, 1894.

THIS consists of two nickel head bands (worn transversely on the head), one for the observer, and the other for the patient, to the appropriate sides of which bands are attached the respective ends of the otoscope, as used in the ordinary way. The otoscope is thus firmly, comfortably, and continuously applied. *Wm. Robertson.*

Deschamps.—*The Vapour of Formol in Affections of the Middle Ear*. "Ann. des Mal. de l'Oreille, etc.," April, 1894.

THE author has obtained excellent results in the treatment of rhinitis, otitis media, and laryngitis, by passing through the nose a stream of air which had bubbled through a solution of five per cent. of formol in water. *Joal.*

Welsford (Dover).—*Rupture of both Tympanic Membranes by Cough*. "Brit. Med. Journ.," July 14, 1894.

THIS occurred in a man, aged sixty, of intemperate habits, who was suffering from bronchitis and emphysema. During a severe fit of coughing he suddenly heard a loud explosion in both ears, and became deaf. There was slight hæmorrhage from both ears, and on examination a large rent was found in each membrane. He ultimately became totally deaf—bone-conduction being abolished. A slight discharge set in, and he complained of tinnitus, which conditions lasted until death, a few months later.

Wm. Robertson.

Bronner (Bradford).—*On Intra-Tympanic Injections in the Treatment of Chronic Dry Catarrh of the Middle Ear*. "Brit. Med. Journ.," Oct. 13, 1894.

THE author recommends these injections in the form of disease characterized by atrophy of the mucosa of the tympanum and ankylosis of the ossicles, especially of the stapes to the fenestra ovalis. He considers that these may arrest the progress of the disease, and in some cases improve the hearing. The disease is erratic, and may remain quiescent for months or years, and then suddenly begin to grow worse without any apparent cause. Dr. Bronner has used for these injections solutions of silver, mercury, chloralis hydratis, vaseline, etc., and now prefers

bicarbonate of soda in paroline. He has met with no accidents (acute otitis media, etc.). The solutions are applied warm with a syringe and catheter (Eustachian), two to three drachms being thrown up the Eustachian tube, and the oil further forced into the tympanum with Politzer's bag. The injections are made at intervals of a few days at first, subsequently at longer intervals.

Wm. Robertson.

Alderton, H. A.—*Acoustic Neurasthenia*. "Ann. Ophth. and Otol.," Oct 1894.

THE author defines this as a disease varying from "slowness of hearing to great impairment." Bone-conduction is diminished, the upper tone limit but little impaired, and great nervous debility detected. Direct treatment of the middle ear gives little encouragement, but rest and tonics improve most cases. R. Lake.

Hobby, C. M.—*Ear-Faints and Epilepsy*. "Ann. Ophth. and Otol.," Oct., 1894.

THE connection between *petite mal* and aural faintness is drawn chiefly from the absence of pallor, dilated pupils, nausea, and the presence of contractions, rigidity, and rapid recovery, the former being usually observed in syncope, the latter more in *petite mal*. R. Lake.

Isaia (Naples).—*The Treatment of Chronic Otorrhœa in Scrofulous Patients*. "The Med. Week," Dec. 7, 1894.

THE author first cleanses the meatus and ear with a solution of resorcin or salt, and then anæsthetizes with cocaine. Peruvian balsam (bals. Peru and alcohol equal parts three drachms, cocaine mur. 7 to 15 grs.) is then dropped into the ear, or introduced on a cotton-wool pledget. This application is only borne well where the meatus and pinna are sound. Wm. Robertson.

Baron (Bristol).—*Four Cases of Labyrinthine Disease treated by Injections of Pilocarpin*. "Brit. Med. Journ.," Dec. 1, 1894.

Case I. : Male, aged thirty, with tinnitus and severe vertigo. Watch, three inches; whispered voice, two feet. Thirty-five injections. Result: vertigo gone; tinnitus unimproved; watch, twenty inches; whispered voice, nine feet; improvement maintained four years; no relapse.

Case II. : Female, aged thirty, deafness of many years' duration. Watch on contact only, no bone-conduction. Forty injections; no result; patient in *statu quo*.

Case III. : Male, aged twenty-three. Deafness after scarlet fever, evidently due to labyrinthine disease. Forty injections, which did not act satisfactorily at first, but subsequently hearing began to improve after several months had elapsed.

Case IV. : A male, aged thirty-four. Improvement of hearing and tinnitus. Thirty-five injections; no improvement as regards tinnitus or deafness.

Wm. Robertson.

Hovell, Mark.—*Removal of an Exostosis of the Auditory Meatus by Combined Drilling and Traction*. "Brit. Med. Journ.," June 16, 1894.

THE exostosis, occurring in the left ear of a female patient, aged twenty-two, almost filled up the meatus to within an eighth of an inch from the entrance. The walls of the meatus being protected with guards, the exostosis was drilled, and then a screw was inserted into the drill hole. Making traction the exostosis was removed, firmly fixed on the screw. The growth was found to have been attached to the junction of the upper and anterior wall. Wm. Robertson.

Taylor (Norwich).—*Removal of an Aural Exostosis by the Chisel after Detachment of the Auricle.* "Brit. Med. Journ., Oct. 20, 1894.

THIS occurred in a boy, aged sixteen, who had suffered from otorrhœa for four years previously. The exostosis appeared as a large, round-looking, smooth, pale pink body, hard and fixed, pus passing through a chink between it and the anterior wall of the meatus. The auricle was detached from the posterior wall, and the exostosis exposed and chiselled off at its base. It measured seven-eighths of an inch long; weight, fourteen grains: apex growing into the tympanic cavity: base presenting externally. The author alludes to the facility with which the operation was effected by adopting the measure he employed—viz., that of detaching the auricle and lifting forward the posterior soft meatal wall, and thus exposing the junction of the exostosis with the main bone. *Wm. Robertson.*

REVIEWS.

McBride.—*Diseases of the Throat, Nose, and Ear.* By P. McBRIDE, M.D., F.R.C.P.E. Second Edition, revised and enlarged. Edinburgh and London: Young; J. Pentland. 1894. Pp. 674.

IN this work the author has endeavoured to review the whole field of laryngology, rhinology and otology, discussing the more common diseases at some length, and the rarer ones more briefly. Such subjects as diphtheria and injuries of the larynx, which "are fully discussed in works on general medicine and surgery," have comparatively small space allotted to them. Three hundred and ninety pages are given to laryngology and rhinology, and two hundred and fifty-seven to otology—scarcely a fair division of labour, and we cannot but think that the former subjects have suffered in consequence. The author has made the attempt, to effect which is well-nigh impossible, to combine in one book of moderate size and large type three special branches of medicine of equal importance, and we cannot think that, on the whole, the effort has been uniformly successful. Most of the descriptions of disease are sketchy and not sufficiently precise to be fully serviceable to the student and practitioner, who will be obliged to supplement this work with others of greater detail. These remarks must not be held to be disparaging to Dr. McBride's work, which is an excellent one so far as it goes, and, to one already conversant with the special literature of the subject and able to fill up the gaps from his own knowledge, is an interesting one.

We read on page 15 that in "septic tonsillitis" the tonsils are swollen and often covered with patches. "The deposit is caused by suppuration of the lymphoid follicles, the irritation so produced gives rise to a fibrinous exudation, and as a result we have a considerable surface of one or both tonsils covered with a grey membranous-looking substance," etc. And again, on page 31, we read of follicular tonsillitis that it is associated with ulceration of the follicles, deposits of fibrin, and often exudation into the lacunæ. We are told that there is another form of

tonsillitis, viz., lacunar, in which the inflammatory process has penetrated into the crypts.

If there is one thing more certain than another as to tonsillitis, it is that the "lymphoid follicles" are only affected quite secondarily, and that the deposit is formed in, and the chief part of the pathological process is expended upon, the crypts or lacunæ. In even very severe cryptic tonsillitis the "follicles" generally show but little departure from the normal. To speak of their ulceration as a cause of deposit, or as being associated with lacunar inflammation in "follicular tonsillitis," is therefore a pathological error. They are scarcely ever affected except in very severe inflammation leading to abscess formation, when they become involved, quite secondarily, in the process, and along with other histological constituents.

We read again that the absence of "albumen in the urine is of more value," *i.e.*, in diagnosing tonsillitis from diphtheria. If Dr. McBride will take the trouble to have the urine tested of his patients suffering from simple angina (as we have systematically done) he will find that albumen, and even a very considerable quantity, is very frequent in the urine of patients suffering from simple tonsillitis. Its presence or absence in the urine of patients with doubtful forms of tonsillitis is of little value as a means of diagnosis from diphtheria.

In speaking of acute laryngeal catarrh (pseudo-croup) Dr. McBride says he "cannot help thinking that much of the dyspnœa is due, in some instances at least, to the presence of associated nasal and pharyngeal catarrh, the secretion thus produced accumulating in the larynx and often giving rise to spasm." Undoubtedly this is true enough. In no text-book of throat diseases do we meet with a proper description of the naso-pharyngeal acute catarrhs of early childhood, which we have so often observed, and of which Ruault has given a very truthful description in his monograph, included in the "*Traité de Médecine*," tome III., of Charcot, Bouchard, and Brissaud. While agreeing in the administration of emetics as a means of cutting short the discomfort of the patient, we are bound to remark that the wine of ipecacuanha, as recommended by Dr. McBride, is one of the worst of drugs to produce emesis in children.

Of "laryngitis sicca" the author's experience is directly opposed to the view that it is commonly associated with atrophic nasal catarrh—indeed, actually refutes it. We must say that our experience of a large number of such cases, and we think that of others, will be more in accord with the statement made by Bosworth, *i.e.*, "I find no case reported in which it (laryngitis sicca) did not accompany a diseased condition of some of the parts above" ("*Diseases of Throat and Nose*," p. 536).

In the chapter upon chronic laryngitis, Dr. McBride remarks that he is "not inclined to attach so much importance as some authors to nasal disease as a factor in the production of laryngitis," though he allows that mouth-breathing tends to irritation of the whole air tract. Here again the experience of London and New York must be opposed to that of Edinburgh, for the more of these cases of chronic laryngitis we

see, the more are we impressed with the conviction that the cause of the disorder is in the upper air passages, and the way to its cure is through the nose and naso-pharynx, though we would not go quite so far as Bosworth, with whom no case has come under observation "in which the development of the morbid process could not be traced directly to some diseased condition of the air passages above." Dr. McBride remarks that "there is at present a great tendency to exaggerate the importance of nasal affections in this (*i.e.*, chronic laryngeal catarrh) as in other respects."

Further on in the work we are warned against intra-nasal surgery, which has produced exophthalmos, vertigo, laryngeal spasm, supra-orbital neuralgia, "incapacity for mental effort," etc. These conditions cannot often occur, or we should hear more about them. From these remarks of Dr. McBride's we are rather of opinion that he underrates the importance of nasal surgery, and over-estimates the importance of supposed bad results. But we meet with indications throughout the work that its author is more of a physician than surgeon. We find him expressing the opinion that Heryng's treatment of laryngeal tuberculosis is "rather heroic," though he admits that it is scientific in principle and has had a number of successes. It is somewhat surprising to read after this admission that Dr. McBride has not so far employed Heryng's method, one which we may remark we have employed for some years in a large number of cases of laryngeal phthisis with very considerable success.

The author suspects that "aprosexia" (or inability to fix attention, and loss of memory, and general backwardness, mentally and physically) is a rare phenomenon in children with adenoid growths. Most laryngologists, we fancy, would affirm quite the opposite. It cannot be often due to coexisting middle-ear catarrh, as McBride opines, because it is often present without this condition. Nearly every laryngologist can recall cases of amazing development, mentally and physically, of backward children, from whom adenoid growths have been removed.

Space will not permit us to dwell further upon the laryngological and rhinological sections of this work. The illustrations of diseases, all of them in colours, are excellently executed, and the work, though far from being complete, is interesting throughout. We may say of it that it is a book safely to be recommended to students, very readable, well illustrated, and handsomely printed and got up. To the young practitioner it will doubtless prove a valuable work. In conclusion, we will only remark upon the frequent references which the author makes to the "London Throat Hospital Pharmacopœia," by which term he persistently misquotes the "Pharmacopœia of the Hospital for Diseases of the Throat," Golden Square, London, an error of designation which, in the interests of accuracy, he should correct in any future edition of his work.

The portion of this book (about 240 pages) devoted to diseases of the ear is, without question, the most readable work on the subject we have met with, the matter being discussed in an eminently flowing narrative style. To attain this end, without sacrificing fulness and accuracy of

detail, is one of the most difficult of the tasks the scientific and literary writer has to face, and Dr. McBride is entitled to the greatest credit for the way in which he has succeeded. The description of the mode of testing the functions and exploring the structures of the organs of hearing is clear, and, in general, sufficient for all practical purposes, though, in his evident desire to avoid making too much of pedantic details and slenderly-founded fads, we think that certain methods of examination have been somewhat undervalued. Thus, the results of Rinne's test with forks of different pitch afford diagnostic and prognostic information of considerable importance, and the more general use of Galton's whistle seems to deserve more emphatic recommendation.

Dr. McBride frankly admits the weak points in the diagnosis of the diseases under consideration, namely, the want of that foundation on morbid anatomical investigation, upon which alone any medical science can be truly securely based. Steinbrügge's objection to the validity of certain tuning-fork tests is quoted as having greater weight than we are inclined to think Steinbrügge himself attached to it, his theory being that increase of bone-conduction is to be explained by increased excitability of the nerve as easily, or more so, than by obstruction in the conducting apparatus.

More recent *post-mortem* examinations, such as those of Bezold, offer very strong confirmation of the value of these tests. The exceptions to the rules will, no doubt, in time receive their explanation, and it will be by the researches of men who, like Dr. McBride, look them fairly in the face, instead of shutting their eyes to them. Thus the contradictory results obtained by Weber's test become more intelligible when we recall Gradenigo's experiments with a vibrator whose intensity could be reduced to a minimum, and Kirchner's observation on a case of exfoliation of one cochlea, in which a powerfully-vibrating fork on the vertex was heard better in the cochlealeless ear—a feeble one in the sound ear.

When we add to this the conception that those portions of the labyrinth (peri-lymph, bone, etc.) which convey vibrations to the terminations of the auditory nerve may justly be looked upon as part of the "conducting," rather than of the "perceiving," apparatus, we are a long way towards a reasonable explanation of the difficulties presented by such cases as that narrated in the second objection on p. 399, though we are far from professing to remove them. These considerations are, however, perhaps more adapted for monographic discussion than for statement in a work confined to what is "known" on the subject. In the treatment of such subjects as tinnitus, vertigo, and nerve deafness, we recognize the hand of the skilled general physician, too often missed in our works on diseases of the ear.

The diseases of the external ear are judiciously treated. In eczema of the meatus the author has still to find a case which does not yield to swabbing with nitrate of silver, ten to fifteen grains to the ounce of spirits of nitrous ether. Furuncle he considers usually due to infection from the nail when inserted for the purpose of scratching in a previously existing eczema. For exostosis he recommends chisel and mallet, with detachment of the auricle if necessary. The indications for operating at

all very seldom arise, and in certain cases it is considered better to open the mastoid. The writer gives, under protest, an excellent account of diseases of the membrana tympani, which more than justifies its presence. The chapter on acute inflammation of the middle ear is admirable in its lucidity, the usual artificial classifications of types being greatly simplified, and the peculiarities of the forms connected with particular constitutional affections, including influenza, typhoid, scarlatina, diphtheria, tuberculosis, diabetes, and (if there be any direct connection) syphilis being clearly described. The author's personal observations on influenzal otitis are peculiarly interesting. The variations in severity in the different epidemics which he has watched are quoted as accounting for the extraordinary discrepancies in the opinions as to course and prognosis in the experiences of different writers. The local treatment he has found most beneficial in acute otitis media consists in the repeated instillation of warm glycerine, medicated with ten per cent. of cocaine and of carbolic acid. Should pain continue, he resorts to leeching; in the next instance, to paracentesis; and if the evacuation of sero-pus does not bring relief, to irrigation of the tympanum by catheter through the Eustachian tube. He does not mention the intra-tympanic tube passed through the catheter, which Politzer recommends, and which the present reviewer finds necessary in the process. After the cessation of pain, he practises inflation. He uses great caution in the employment of insufflations of powders. Chronic suppuration when uncomplicated is fully discussed in all its phases, Shrapnellian perforation receiving considerable attention. Milligan's intra-tympanic syringe is specially recommended. The "dry" treatment is, on the whole, discountenanced. In cases of inspissation of pus and epithelium, the employment of digestive ferments in the form of liquor pancreatins or a five per cent. solution of papain is advocated. The "alcoholic" treatment, with slow graduation of strength in suitable cases, is much praised. Little confidence is placed in operative measures, as involving risks of re-awakening suppuration, and as offering very uncertain results.

The dangers attending the occurrence of pain in the course of chronic suppuration, and especially when associated with diminution or cessation of discharge, are strongly dwelt on. The descriptions of the operations of excision of the membrane and ossicles, and of Stacke's operation, are the clearest and shortest we have met, and the same may practically be said of the section on the dangerous intra-cranial complications. The diagnostic features are given in full, but the principles rather than the details of operation are supplied, the writer disclaiming any intention of trespassing on the domain of the general surgeon. He holds out the hope that, by the free exposure of parts afforded by Stacke's operation, sinuses communicating with the endo-cranium may be enlarged, and the call for cranial surgery diminished.

Among the points indicated as of value in cases of serous exudation in the tympanum is "downward massage" of the parts behind the ear. Under the heading of fibroid changes in the middle ear without previous suppuration are included the exudative as well as the proliferative or sclerotic forms, which are described together. There is, however, a

valuable account of certain types, the catarrhal, the hereditary, the rheumatic, the neurotic, and the syphilitic, which answer many clinical requirements. In excessive relaxation multiple incision is discarded in favour of collodion.

As regards tympanic operating procedures in chronic dry catarrh, Dr. McBride adopts none except section of the posterior fold, the only one devoid of risk. He has a proper dread of occasioning inflammatory reaction, the absence of reference to which, in the publication of extensive series of cases, he considers more than suspicious. He thinks that the danger to the ear from obstruction of the anterior nares has been over-estimated, and that operations on such should not be carried out on aural grounds alone, but only if demanded for rhinological or laryngological reasons as well. Adenoid vegetations and naso-pharyngeal catarrh, however, demand treatment in all cases. Little could be added to the chapter on diseases of the auditory nerve and labyrinth, which contains a well-digested summary of all the practical information on the subject. The subdivision into those occurring gradually and those whose onset is extremely rapid or sudden, will be found of great clinical assistance. The advantageous results obtained in cases both of acquired tertiary and hereditary syphilis from the use of pilocarpin will be noted with interest.

The opinions of other workers are freely quoted, acknowledged and criticized, but we could wish for such indications as would facilitate reference to the original papers.

On the whole, we can most confidently recommend this clear, compact and readable *résumé* of practical otology as calculated to excite the reader's interest in the subject, and to satisfy all the learner's reasonable requirements.

R. Norris Wolfenden—Dundas Grant.

Behring (Berlin).—*Die praktischen Ziele der Blutserumtherapie und die Immunisirungs-methoden zum Zweck der Genesung von Heilserum.* ("The Practical Aspect of Blood-serum Treatment and the Immunization-Methods for the Production of Heilserum.") 66 pp. Leipzig: Thieme. 1892.

Behring (Berlin).—*Das Tetanusheilserum und seine Anwendung auf Tetanus-krankte Menschen.* ("Tetanus-Heilserum and its Application to Man affected with Tetanus.") 122 pp. Leipzig: Thieme. 1892.

Behring (Berlin).—*Gesammelte Abhandlungen zur aetiologischen Therapie von ansteckenden Krankheiten.* "Collected Treatises concerning the Etiological Therapeutics of Infectious Diseases.") 366 pp. and 46 tables. Leipzig: Thieme. 1893.

THE treatment of diphtheria by Heilserum at the present time is the most active subject of medical science. Each man of science and each practitioner must form for himself opinions as to the value of this new method. The name of the originator is for the time the most popular in Europe. It will therefore be of interest to everyone to know what Behring has published up to now upon this question—to those who think favourably of the method, who cannot but admire the great amount of work and invention exposed in these books, as much as to those who are adverse to this method, who ought to know the opinions of an author

whom they will no doubt attack. The journalistic articles of the author have been already reported in this Journal; also his "History of Diphtheria" (Leipzig: Thieme. 1893). A book on the prevention of infectious diseases will be reviewed when the second volume is published. Here may be given a short review of the works referred to in the title.

In the first book ("Blutserumtherapie" I.) the author states that the new method consists in the application of substances which will destroy the causes of the disease. This is performed in such a manner that an animal is rendered immune, and the serum of this immune animal is applied to the affected organism. It is not necessary that the first individual should be a human being; it may be a horse or a sheep. The author reviews in regard to this treatment, tetanus, streptococcus invasion, and diphtheria. He describes the details of the immunization of animals, and concludes with a table upon the different methods of immunization, and the power of the immunizing agencies.

The second book ("Blutserumtherapie" II.) gives the details of the fabrication of tetanus Heilserum and the mensuration of its curative power, reports upon the theoretical differences between blood-serum therapy and other methods of cure, and the application of the serum to affected individuals; the cure of a case of tetanus by serum (observation of Dr. Rotter), and the curative effects of the tetanus Heilserum in sheep and horses affected (with the collaboration of the veterinary surgeon, Dr. Caspar).

The third book ("Collected Treatises") has the greatest value to those who desire to become acquainted with the method of study which the author has adopted on which to found his theories of treatment of diseases by serum, and the views of the author on disinfection. In the introduction he states his views on infectious diseases, reviews the historical development of the different theories, with special reference to Bacon of Verulam, Sydenham, Bretonneau, and Virchow. He then speaks of specific and etiological treatment. The first part of the book reviews the experimental work upon disinfectant medicaments, such as iodoform, acetylin, corrosive sublimate, nitrate of silver, creoline, and cyanides, and concludes with a chapter upon the bactericidal powers of different blood-serums.

The second part of the book relates experimental studies on immunization and the cure of infectious diseases. It begins with a paper on the disinfection of the living organisms, read at the Seventh International Congress in London in 1880, and of special interest because we find in it the first publication upon the author's hypotheses.

The following papers treat of "Researches on the Immunity of Rats against Anthrax," "Researches on Diphtheria Immunity of Animals," "On the Disinfecting Powers of the Blood," "On the Diphtheria of Guinea-pigs" (Dr. Boer); "On the Etiology of Anthrax," "On the Nature of some Streptococci" (Dr. Kringelsheim); "Experimental Studies on the Streptococcus Longus," and "On the Immunizing and Curative Power of Tetanus-Heilserum" (Dr. Rudow). In a very exact manner and illustrated by forty-six lithographed curves the author refers to his experimental observations of immunized sheep, on immunity

against bacteria and toxic substances, and on protracted and recurrent effects of bacterial poisons.

The last chapters of the book contain the studies of Behring, Behr and Kossel "On Diphtheria, and its Treatment by Serum"; known to our readers by the reports in this Journal.

In spite of the circumstance that only a portion of these studies is of special laryngological interest, the book must be praised as one in which the understanding of the current theories is made lucid by the work of the author, who is most competent to deal with these questions. *Michael.*

Gottstein and Schleich, C. L.—*Immunität, Infection Theorie und Diphtherie Heilserum. Drei kritische Aufsätze.* ("Immunity, Infections and Diphtheria Heilserum.") Three critical papers. Berlin: Springer. 1894. 69 pp.

In the *introduction* the authors say that they will make critical remarks upon the causes of infectious diseases, and on the methods of their treatment. For a second time the comparatively young science of bacteriology promises with great certainty admirable results, and awakens hopes, the fulfilment of which they doubt. The hard judgment of the public will punish the whole science of medicine if they are a second time deceived. But if these results are as good as they are expected to be, the authors combat presumptions, and they must have another explanation.

1. SCHLEICH. *Immunity.*—Disease is a form of struggle of the life of the individual against damage to which the human organism is not yet adapted. For those who believe that man is the crown of creation this combat will finally end with the victory of man. For evolutionists it will not be impossible to think that the end of the struggle will be the victory of the micro-organisms. The existence of toxin and antitoxin is an hypothesis adapted from organic chemistry, and the proclamation of this dogma has the *naïveté* of all unscientific therapeutic fanaticism. But if Nature cures by forming antitoxins, it seems not improbable that a similar action may be obtained by art to what Nature performs in a slow manner. Darwin's theory cannot be adapted to this theory, for we often see individuals, wretchedly burdened hereditarily, victorious against diseases which strike down healthy and strong persons, and especially do we observe this in pneumonia and diphtheria. It is not possible to consider any analogy with the inoculation of small-pox, because in small-pox there exists a natural immunity from the disease itself; but individuals who have had diphtheria have not the least immunity against this disease. On the contrary, we often get the impression that the predisposition to acquire it is still further increased in those who have had diphtheria. Acquired immunity is not, perhaps, a general condition, but only a standard of those regions through which infection usually arises—a local immunity. This fact has been proved for hydrophobia by Pasteur. If immunized animals are inoculated in the brain by trephining, they get the disease. The same may be thought for the immunity of intoxications; for example, in a morphinist, the path of absorption may obtain the power to resist absorption, so that greater doses are necessary to obtain any effect. In the morphinist the narcotic applied by the rectum sometimes causes severe intoxication, even when the subcutaneous application has

no longer any effect. Scarlet fever immunizes itself against acquisition in the usual manner, but persons who have had the disease still get surgical scarlatina as easily as others. Immunity must be obtained by a cellular-pathological process in the lymphoid channels, and by obliteration of lymphoid channels, as may be macroscopically observed occasionally in extirpated infected lymphoid glands. Those animals which are made immune are such as never acquire diphtheria through the natural ways. Their immunity, therefore, has no analogy to man.

2. GOTTSTEIN. *Infection Theory and Infectious Diseases*.—The theory of Robert Koch and his school as to the development and specific nature of bacterial diseases, their propagation, and the methods of their prevention, is founded on the fact of the constancy of the pathogenic powers of the micro-organisms. It is necessary that a pathogenic organism should have virulent powers; that the diseased individual should have a predisposition to disease from this agent, and that there should exist a proportion between virulence and predisposition. At great length the author proves that it is no longer possible to believe that a certain micro-organism causes a disease only because it is found to occur in many cases. The principal fact proving the contrary is that certain bacteria, such as bacterium coli, bacterium Loeffleri, and others, are found sometimes to exist as harmless saprophytes in healthy persons; the same is observed of the cholera bacillus. If there exists a personal predisposition or disposition of a certain genus of animals, the micro-organism is deleterious. If there is immunity of the person or the genus, the micro-organism does not do any harm. It is not impossible that the bacteria do not cause the disease but only accompany it, as certain species of organisms are always found where decomposition exists. But the specificity of forms of intoxications by poisons produced by the bacteria cannot be denied. It might be possible to explain the cause of disease in the loss of the power of the normal organism to prevent the entrance of specific poisons produced by the micro-organisms. If these facts are applied to the theory of diphtheria, it must be admitted that it is not possible to say that the knowledge of the diphtheria bacillus alone can illustrate the development of the disease: it is probable that it is only able to produce the disease in combination with other circumstances not yet sufficiently well known.

3. GOTTSTEIN. *Serum-therapy, and Statistics of Cures*.—A careful criticism of the numbers and of the cases contained in the statistics published up to now (details must be seen in the original) give the following results: Decrease of some few per cents. in the mortality is observed; it does not suffice to prove anything as to the curative power of Heilserum, because it does not differ from the variations of mortality always observable in Berlin; it is much higher than the mortality observed in other cities, which do not usually suffer such grave epidemics as Berlin. This small diminution can perhaps be produced by the injection of salt solution, which is proved to be useful in many diseases. The assertion that commencing the treatment during the earliest days gives a mortality of only ten per cent. is not at all proved. The non-existence of an immunizing power is certain. The disadvantageous results produced by the treatment are not yet excluded with certainty. *Michael,*

Traité theorique et pratique de Maladies de l'Oreille et du Nez. By C. Mior and BARATOUX. Paris: Ballaile & Co. 1894.

THIS is the fifth number of the book, and deals exclusively with diseases of the middle ear. It is clearly written, and embraces all that has been done in this division of otology, together with much that is original, and this is especially marked in the treatment. The sixty-one illustrations are very good, and are all original, and, fortunately, there are but few of instruments. The chapter on tympanic and intra-tympanic operations is very full, and many are illustrated by diagrams, and the indications for operation are very clear. The chapter on fibrous tumours of the handle of the malleus is a new feature in aural surgery. The book is one which necessarily is more useful as a part of the whole work, which will rank high in otological literature, and which well repays perusal.

R. Lake.

PROCEEDINGS OF THE LARYNGOLOGICAL SOCIETY OF LONDON.

Meeting, October 10th, 1894.

Adenoma of Tongue. Clinical case exhibited by Mr. CRESSWELL BABER.

E. W., aged sixteen, came as out-patient to the Brighton Throat and Ear Hospital, on July 2nd, 1894, with a history of difficulty in swallowing and thickness of speech for nine months. A tumour was found at the base of the tongue about the size of a small walnut, which hid the larynx from view. There was no dyspnoea. On July 16th she was admitted into the hospital as in-patient, and the following notes were made: "The affection of voice and deglutition began in September after a 'sore throat,' and for a week before she first applied she is said not to have been able to eat anything. The tumour is globular, now about the size of a walnut, in the median line of the tongue, attached by a large base just in front of the epiglottis. It has a smooth surface, of a mottled red and white colour, with numerous veins coursing over it. It is seen on depressing the tongue forcibly, and when retching is induced it starts up, filling the whole faucial space. The tumour, which presents the appearance of a cyst with thick walls, can be well seen in the laryngeal mirror. It hides the epiglottis, and only the posterior half of the cords (which are clear and pale) can be seen when the patient phonates a high 'e.' On palpation the tumour also gives the impression of a cyst, and below it the epiglottis can be indistinctly felt." On July 19th the growth was seized with catch forceps, which caused rather free venous hæmorrhage. This was arrested with the galvanic cautery. The tumour was then punctured in the centre with a galvanic cautery point, and a probe passed in nearly one inch, but no contents escaped, and the growth became only slightly, if at all, reduced in size.

The opening was kept patent with probe and cautery for a short time, but as no appreciable diminution in size took place, the tumour was removed on August 31st with the galvanic snare, which was adjusted without any difficulty. There was no hæmorrhage of consequence, and the growth came off on a level with the surface of the tongue. No untoward symptoms occurred beyond slight hæmorrhage ten days afterwards. Before she left the hospital on September 24th the surface had quite healed, but had become rather more raised into an irregular flat growth, which was reddish at its posterior part. It felt firm to the touch. The epiglottis, which was clearly seen, was so pendulous that only a glimpse of the cords was obtainable. There was no pain or difficulty in swallowing, but the voice remained about the same, partly hoarse and partly nasal in character. There was no swelling in the median line of the neck, or enlargement of the thyroid gland. On October 2nd the remains of the growth appeared rather flatter, though still raised at the back part, and the epiglottis was somewhat less pendulous.

Remarks.—This case closely resembles those described by Mr. Butlin in the "Transactions of the Clinical Society of London for 1890," Vol. XXIII. p. 118, under the head of "Glandular Tumours of the Tongue." Mr. Butlin could only find eight cases of this description, two of which were under his own care. In one of the eight the tumour was situated on the under surface of the tongue near the tip; in the remainder, as in this case, its position was on the back of the tongue just in front of the epiglottis. As in Butlin's first case, in the present one the growth felt so elastic that it gave the impression of being cystic. All the cases mentioned by Butlin occurred in females, whose ages varied from extreme infancy to thirty-two years.

The *microscopical examination* was kindly made by Mr. H. H. Taylor, who reported as follows: "The minute structure of the growth closely resembles that described by Mr. Butlin in the 'Clinical Society's Transactions,' Vol. XXIII. Round or oval spaces of small size, lined 'by a single layer of cubical epithelium, and containing in some cases granular, in others hyaline material. The interstitial tissue is made up of fine nucleated fibres. Towards the capsule the spaces are larger and more irregular in outline. Here and there (but very few in number) some of the spaces are elongated and flattened, somewhat resembling ducts, but I do not think they are of this nature. I cut vertical and horizontal sections to see if ducts were present, but failed, with the exception of the appearances mentioned above, to find any."

"The growth closely resembles thyroid tissue, and may well be connected with some fœtal remains of the lingual duct. There are no cysts, nor does the tumour present any tubular structure."

This case, therefore, seemed to support the theory advocated by Bernays and Bland Sutton, that these tumours are of the nature of accessory thyroid glands.

MR. LAKE mentioned a similar case.

THE PRESIDENT, replying to Mr. Baber, advised that the growth should be again removed by the snare, but no more radical operation undertaken unless the symptoms became serious.

Immobility of the Left Vocal Cord. Dr. BENNETT showed this case.

Mrs. C., aged forty-seven. Onset about two years ago. Loss of voice had been progressive, but more rapid since influenza some ten months ago.

First seen three months ago. There was no congestion, no ulceration, and no symptoms which pointed to any other affection. There were no certain signs of chest mischief either in the lungs or in the vessels. There was no difficulty in swallowing. There was at first a sensation of aching over the larynx, but this soon disappeared. She took iodide of potassium for a short time, but without any benefit. There was no suspicion of syphilis.

Dr. DUNDAS GRANT thought it difficult to account for the immobility. There seemed to be no special cause within the larynx, and no evidence of pressure upon the nerve-trunk unless by a deep-seated gland. The further history of the case might explain it.

Dr. TILLEY suggested that the spasms might be indicative of tabes. He had seen a similar case in a male whose pupils had subsequently been contracted and the knee-jerks lost.

Dr. SPICER had noticed some fulness in the left pyriform fossa, and thought that there might possibly be a local lesion.

The PRESIDENT could not tell the exact cause of the lesion in the present case; fixation of one cord was often seen and was not incompatible with good health. Such cases ought to be carefully kept in view, and *post-mortem* as well as clinical evidence recorded. Gouguenheim had suggested that some enlargement or inflammation of one of the chain of glands accompanying the recurrent laryngeal nerve might account for such cases. It was very desirable that the whole course of the recurrent laryngeal and vagus should be closely examined when opportunities occurred. The first case of paralysis preceding tabes had been shown in 1878, two years after the onset of the paralysis. The patient lived for eight years afterwards. Many cases had been reported since. He had examined many cases at Queen Square Hospital and found some without paresis of any kind, unilateral or bilateral. The relative frequency was difficult to determine. In his first twelve cases he had found seven cases of paralysis or paresis, but not another case in the next fifty or sixty cases of tabes. Hence the discrepancy of frequency among different observers.

Cystic Fibroma of the Left Vocal Cord. Dr. ADOLPH BRONNER (Bradford) showed microscopical specimens of a tumour.

It was removed from a clergyman, aged seventy-six. The veins were very distended and numerous, and there were several large cavities lined with endothelium.

Drawings of similar growths were shown, as demonstrated by Prof. Chiari in "*Archiv für Laryngologie*," ii., 1.

The growths were situated on the upper surface of the cord, and had been first noticed three years ago. Fibromata of the small cords were rare in old age.

Epithelioma of the Epiglottis.

Dr. BRONNER also showed a man of seventy-eight, suffering from a growth of three years' duration. There were unmistakable symptoms of

secondary affections of the liver and lungs. The growth was partly removed by cutting forceps, and the patient could now eat and speak without any difficulty. It was very rare indeed to find secondary deposits in cases of epithelioma of the larynx.

Case of (?) Chronic Tuberculosis of the Larynx. Dr. DE HAVILLAND HALL showed this case.

R. M. V., aged fifty-one. The patient stated that he had had syphilis twenty-six years ago. He first began to be troubled with his throat ten years ago, but he was not much inconvenienced until five years ago. For the last three years he had been under the care of Dr. Valentin, of Berne.

He first consulted Dr. de Havilland Hall on May 26th, 1894. The epiglottis, ary-epiglottic folds, and arytenoids were found to be greatly tumefied, and the glottis was reduced to a mere chink, the vocal cords not being visible. The mucous membrane of the posterior wall of the pharynx was replaced by cicatricial tissue. The septum nasi was completely destroyed. At the apex of the left lung posteriorly there was impaired resonance, with bronchial breathing and occasional *râles*.

On making a forcible expiration with the mouth closed, two tumours appeared on each side of the larynx. (? Dilated ventricles of Morgagni.) A distinct "pop" accompanied the appearance of the tumours.

As the symptoms of laryngeal stenosis steadily increased, the patient was admitted into the Westminster Hospital, and tracheotomy had to be performed rather suddenly on June 3rd by the house surgeon, Mr. S. A. Bull.

At the present time the patient was taking carbonate of guaiacal internally, and the galvano-cautery was being applied to the larynx. The patient had gained weight and improved generally since the tracheotomy, and the application of the galvano-cautery had been followed by marked diminution of the swelling of the epiglottis, so that the vocal cords were now visible.

Dr. de Havilland Hall regarded the case as having been of a syphilitic nature at the commencement, but thought that the present condition was due to chronic tuberculosis.

Dr. BEALE referred to a somewhat similar case shown in 1893, in which the laryngeal conditions had remained unaltered for a twelve-month. The patient had taken iodide persistently, and believed that it kept the disease in check. The passive, swollen, and congested condition, occurring in association with tubercle and syphilis, as in Dr. Hall's case and his own, seemed to be due to the combined processes.

Dr. BRONNER suggested the use of mercurial inunction.

Dr. HALL had found that the most relief was given to the dysphagia by cauterization of the swollen epiglottis, which was tough and leathery.

Dr. DUNDAS GRANT thought that in the combined cases of tubercle and syphilis there was generally ulceration. The dry appearance of the larynx in the present case was very striking.

Tonsillar Mycosis. Mr. R. LAKE showed two cases, both females.

He wished to raise the question whether there was any more rapid method of dealing with these cases than that of galvano-cautery? One

of these cases had been freely and carefully cauterized once a week for three months, and was not yet cured : the second had not had more than one application.

Dr. HALL advised continued use of the cautery, as that treatment gave relief at any rate.

The PRESIDENT thought that these cases might well be left alone if they gave rise to no distress. He had quite given up the use of the cautery to the disease on the base of the tongue, and had seen disastrous results ensue where it had been used. Patients, as a rule, only became aware of the disease by seeing the white patches in the mirror, which they described as "ulcers," and often declared that no discomfort was caused by them. To destroy the colonies of mycosis on the surface was easy, but it did not cure the disease. Change of air and general treatment gave better results than operation.

Mr. CRESSWELL BABER thought it best to leave the milder cases alone. When the growth was extensive he had seen good results from the application of absolute alcohol.

Dr. SPICER had used the galvano-cautery in such cases very frequently without permanent benefit. He preferred to cut away the tonsillar tissue, and so to destroy every crypt that could harbour the growth. At the base of the tongue he preferred to apply antiseptic remedies.

Dr. BENNETT advocated forcible syringing out of the crypts and application of pure carbolic acid to the openings.

Dr. DUNDAS GRANT pointed out that pharyngo-mycosis was very distinct from pharyngitis with accretions, but the distinction was not always recognized, and the condition was sometimes mistaken for syphilis. He had used the galvano-cautery in each individual crypt, but had found very good results from the daily use of a lotion of tincture of iodine with fifteen grains of bicarbonate of soda. In one case it had completely checked recurrence.

Mr. LAKE, in reply, thought that patients generally complained of subjective symptoms and sought relief, without always being aware of the white patches in the throat.

Lupus of the Nose treated by Thyroid Extract. Mr. LAKE also showed the two following cases :

The first, a boy of eleven years of age, had suffered for fourteen months. The soft palate and posterior pillars of the fauces were also affected. He had been taking seven and a half grains of thyroid extract daily since July 14th, and was very much improved.

The second case, that of a girl aged sixteen years, had been affected for three years, and when put on thyroid treatment at the same time as the boy, also had a patch of lupus below the right eye over the nasal duct. This was now almost healed, and the nose was very much improved ; she was now taking seventeen and a half grains daily. Mr. Lake wished to show these cases to the Society in order that, if successfully cured by this treatment, the result might subsequently be verified.

Dr. DUNDAS GRANT expressed some doubt as to the nature of the disease in the girl's case. He pointed out that the thyroid extract had not been the sole treatment.

Dr. JESSOP related a case in which marked improvement had followed the use of three hundred tablets in a case where the disease had existed for thirty years.

Tonsillar New Growth. Dr. SCANES SPICER showed this patient.

Thomas H., aged seventy, had a vascular tumour the size of a large walnut, spreading from the lower part of the right tonsil on to the base of the tongue. Two years ago thorough tonsillotomy was performed for growths which were too large to lie laterally in the pharynx, so that one passed upwards, the other downwards; the symptoms were dysphagia, dyspnoea, and unintelligible articulation. The reappearance on the right side had been very gradual, and its growth was slow. Microscopically it was made up of closely-packed round cells. Repetition of removal was proposed, but suggestions were invited.

Dr. BRONNER referred to the value of arsenic in large doses in such cases.

Dr. TILLEY mentioned the case shown to the Society by Mr. W. R. H. Stewart last session, in which arsenic had given very marked relief for a time

Dr. W. HILL thought that such cases showed varying degrees of malignancy, but they all tended to spread if left alone. He would not use the guillotine, but preferred enucleation.

Dr. PEGLER regarded the case as one of lympho-sarcoma, and not ordinary hypertrophy.

The PRESIDENT remarked that after the age of forty such cases were generally lympho-sarcoma or adenoma.

Dr. DUNDAS GRANT suggested that the tumour should be enucleated by snipping through the mucous membrane and turning the growth out by means of the finger.

Mr. DE SANTI thought that such a growth might be removed by external incision, and referred to two cases thus treated.

Dr. SPICER replied.

Laryngeal Stenosis supervening on Typhoid Fever. Dr. SCANES SPICER showed this patient.

A young man, aged twenty, was under Dr. Cheadle in St. Mary's Hospital six months ago for typhoid fever. Acute stenosis of larynx supervened, and tracheotomy was performed. Some weeks afterwards he was sent to the throat department for examination. The vocal cords were found to be adherent at anterior fourth, and on attempting breathing with finger on trachea tube, a red sub-glottic mass was seen to almost completely occlude the lumen. He could phonate, but a probe could not be put through stricture after cocainizing, nor was intubation, attempted with some force, successful. The case was shown preliminary to division of stricture under general anæsthesia by Whistler's dilators and use of O'Dwyer's intubation tubes.

The PRESIDENT agreed that an attempt should be made to divide the stricture and dilate it, but he was not sanguine as to the result in such a case.

Meeting, November 14th, 1894.

Swelling of Left Side of Larynx, with Paralysis and Atrophy of Left Half of Tongue and Soft Palate, and Perichondritis. Mr. A. A. BOWLEY showed this case.

John T., aged fifty-two, a meat porter, had had good health previous to December, 1893, when he began to suffer from a painful lump, about the size of a walnut, on the left side of the front of the neck. There were no other symptoms. Under treatment he improved; the pain left him, but the lump remained.

When seen again, in August last, there was a large and extremely indurated mass, nearly as large as an orange, in front of and to the left of the larynx. There were pain, dysphagia, and blood-spitting. With fomentations the mass softened, and an incision let out about an ounce of pus. He improved for a while. On October 2nd he again came under observation. Then there was inability to swallow solids, constant cough with glairy expectoration, but no hæmoptysis, and some loss of weight. There was still a hard mass, softening near site of old scar. He was admitted to the hospital. On October 10th some pus was discharged through the old scar, and patient was relieved. There was also some hæmoptysis. He then came under observation in the throat department, and examination found—

Externally, an old scar situated over and adherent to the thyroid cartilage, discharging pus, but no tenderness on manipulation. Beneath the left maxilla there was felt an enlarged stony hard gland, with the superadjacent skin intact. Some slight loss of facial symmetry noticed. The tongue was protruded with difficulty, and pushed over to the left; the left half was in an advanced state of atrophy. The left half of the soft palate was also atrophied, and hung lower than the right; it had but little movement, being only dragged up by the right half. Slight rigidity of the soft palate noticed in attempting to raise it up on the back of a throat mirror. No scars on soft palate or tongue. Larynx: epiglottis twisted out of the median line, so that the tip was looking towards the left; occupying the greater part of the left half of the larynx there was a smooth reddish mass, obscuring the posterior two-thirds of the left cord and ventricular band. The right cord was fixed and partly hidden by the overhanging ventricular band. No ulceration or scar.

Since this examination the mass referred to had increased in size, and now only part of right cord was to be seen.

Examination of chest yielded no definite morbid signs. No history of syphilis.

Remarks: Much of the swelling was evidently due to perichondritis, but the question was whether this, in its turn, was due to a malignant growth. In favour of this event was the extreme hardness and fixity of the glandular swelling. It was, further, a very rare thing for paralysis of nerves to be caused by any merely inflammatory swelling. The atrophy of the tongue was probably due to pressure on the hypoglossal

by the mass of glands which lay just over its course. On the other hand, the prolonged history, and the fact that the patient had improved under treatment seemed to point to perichondritis, without new growth. The only operation which appeared at all likely to be useful was one for exposing the thyroid cartilage opposite the swelling, and seeing if there was any necrosed portion to be removed.

The PRESIDENT thought that there was no evidence that the growth was causing the paralysis. There were no other symptoms of disturbance of the vagus. It must be remembered that both centripetal and centrifugal fibres had been demonstrated in the pneumogastric, but in the recurrent laryngeals the existence of centripetal fibres had never yet been shown, although many observers believed in their existence. Unilateral pressure on the recurrent laryngeal did not cause bilateral paralysis or spasm.

Tubercular Disease of Soft Palate, Larynx, Pharynx, and Lungs.
Mr. A. A. BOWLBY showed this case.

P. R., aged twenty-two, a bootmaker, was seen first on October 24th, 1894, on account of a sore throat he had had five weeks. When first seen, there was spreading over the soft palate and uvula and on the pharynx a greyish membranous-like deposit, which at a glimpse was suggestive of diphtheritic membrane; but there was no swelling nor oedema of the parts, the tonsils were eaten into and excavated, and appearing through the secretion were a number of small pin-head glistening nodules, which clustered thickly around the base and tip of uvula. On cleaning the part a bleeding surface was left, which was irregularly ulcerated. The pulse was quickened, and the temperature raised between 101° and 102°.

The tongue was free from disease; by depressing it the tip of the epiglottis could be seen thickened and reddened. The epiglottis was turban-shaped, and on the tip one or two whitish pin-point nodules, but no ulceration. The arytenoids were somewhat reddened and enlarged, the left more so than the right, but their surfaces intact. The cords and ary-epiglottic folds were very slightly affected, and presented no ulceration, the cords moving well and equally. No particular change in voice.

There were well-marked signs of chronic but progressive disease in the lungs.

November 9th.—Some scrapings from the soft palate, and also the sputum, yielded tubercle bacilli.

Since the 24th of October, when he was first seen, there had been no very appreciable increase in the extent of the ulceration of the soft palate, but what there was had become deeper. The laryngoscope showed further epithelial changes along the tip of the epiglottis and on the summit of the left arytenoid.

In his general health the patient had improved, and the disease in the lungs was not so active.

There was no history of syphilis, nor any family history of phthisis.

Mr. BOWLBY observed that there seemed to be no doubt of the nature of the affection in this case, and it did not appear that any radical treatment of an operative nature could be undertaken, considering that the

disease was very widely spread. He had, however, seen one similar case of even greater extent, which recovered under the use of iodoform locally and cod liver oil internally, and he proposed to continue the same lines of treatment in this case.

Pachydermia with Perichondritis. Dr. ADOLPH BRONNER (Bradford) showed a specimen of diffuse pachydermia of the larynx with perichondritis of the right arytenoid cartilage.

The man, a brushmaker, aged seventy-two, had been hoarse for four years, and there had been difficulty in breathing for three or four weeks. He was admitted into the Bradford Infirmary; tracheotomy was performed on the following day, but the patient died of broncho-pneumonia in eight days. No tubercle bacilli could be found in the sputum or lungs. There was a scar on the glands of the penis, probably specific. The long duration of the hoarseness and loss of voice, and the short duration of the dyspnoea, seemed to point to the pachydermia as the primary condition, and that the perichondritis was due to the pachydermia. It was possible, however, that the perichondritis had caused the pachydermia. The vocal cords were very thick, and showed several small growths. The ventricular bands were also much enlarged, and the mucous membrane of the right ventricle was so enlarged as to project to some extent.

Similar cases have been recorded by B. Fraenkel in the "Archiv für Laryngologie."

Mr. BUTLIN observed that so-called perichondritis was frequently neither more nor less than syphilis, and he thought that it was so in the present case. It was always difficult to distinguish at first sight between pachydermia and flat epithelioma.

Dr. MILLIGAN (Manchester) commented on the difficulty in determining whether perichondritis or pachydermia was the primary condition when both were present.

Case of Lymphadenoma with Obstructed Breathing. Dr. JAMES DONELAN showed the patient.

J. B., aged forty-three, was first seen at the Italian Hospital four weeks ago. His father died of "cancer of the throat." His health has been always good, except a slight tendency to bronchitis.

On November 9th, 1893, a discharge from the right ear began almost painlessly, and continued for two months. A swelling next appeared on the right side of the neck, followed by a similar swelling on the opposite side. Dyspnoea soon set in, and he was obliged to give up his trade of baker. There was marked enlargement of the cervical glands along both borders of the sterno-mastoids, with dulness over the sternum. A small group of enlarged glands could also be felt near the xiphoid appendix. There was bronchial catarrh and considerable venous congestion of the head, neck, arms, and hands, from which gradual closure of the superior vena cava was to be inferred. The spleen was moderately enlarged but painless; there was, however, some pain over the liver. No microscopic examination of the blood had yet been made, but there appeared to be little anæmia. Up to the present the patient had been taking three

minims of liq. arsenicalis three times daily, but the stomach did not seem able to stand any larger dose.

Mr. W. G. SPENCER mentioned a case in which there had been marked intolerance of arsenic until a portion of the adenomatous mass was removed, after which the patient was able to take the liquor arsenicalis hydrochloricus with marked benefit.

Dr. DE HAVILLAND HALL pointed out that where intolerance of arsenic was present, it was advisable to change the form of administration, since patients could sometimes assimilate one preparation while quite unable to bear another.

Papilloma Nasi with Rodent Ulcer in an Aged Patient. Mr. P. DE SANTI showed the patient.

David P., aged eighty-two, was admitted to Westminster Hospital on June 6th, 1894, with a growth in left nostril. Five years previously he had noticed a small pimple on the inner and upper part of the left nostril. It had gradually increased in size, and interfered with nasal breathing. It had never been painful. About one year ago he noticed that he had a fœtid discharge occasionally from left nostril, perceptible to himself as well as to others.

About one year ago he noticed a similar kind of pimple on the skin over the right side of the nose. It increased very slowly in size, was painless, but itched. He therefore scratched it, and it ulcerated and then became covered with a scab.

On admission the left anterior naris was occupied by a pear-shaped growth which occluded the passage, and protruded slightly from the nostril. The part protruded was rather dry and blackish, but not ulcerated. The part within the naris was of a pinkish colour, and a pedicle could be easily traced up to the septum nasi at the junction of bone and cartilage. The attachment of the pedicle was small, there was no hardness or sense of infiltration at its base. No ulceration anywhere. The growth resembled a small cauliflower, and was freely movable. The man's general health was excellent. There had been no loss of flesh, there were no enlarged glands; no history of syphilis. The rodent ulcer was about the size of a Spanish nut, raised and hard, its surface being covered with a scab; there was no attempt at cicatrization.

The growth in the nostril was removed with a pair of scissors, and its base cauterized on June 19th; the rodent ulcer was excised on July 10th.

Congenital Fistula of the Neck. Mr. W. R. H. STEWART showed this case.

C. G., aged nineteen, first noticed a slight enlargement over the apple of the throat five years ago, quite in the middle line. Was then taken to a general practitioner, who pronounced it a goitre, and after some external treatment with no result, consulted with another general practitioner, who agreed with the diagnosis, and decided to remove the growth. The wound did not heal, and when seen by Mr. Stewart, in November, 1893, there was a veritable rabbit warren of sinuses running in every

direction, and the scar tissue was bound down to the thyroid cartilage. He slit up the sinuses and thoroughly scraped them with a sharp spoon and freed the larynx, but could not, with the finest probe, find any further channel. The wound not healing he dissected out the whole scar tissue, following it up as far as it went. The wound healed, but some weeks afterwards broke out again. After trying remedies, such as nitrate of silver, chromic acid, and the galvano-cautery without avail, he again operated, following the new track as far as the hyoid bone. This was once more unsuccessful, except that the new sinus was much shorter and straighter. He was now trying the injection of a forty grain solution of chloride of zinc. The first injection went into the throat, and created a large amount of inflammation there. The second did not reach the throat, and now there was next to nothing in the way of a discharge, and the probe would only go about a quarter of an inch. There was a difficulty in obtaining a correct history of the earlier stages of the trouble, but he looked upon this as one of those cases of congenital branchial fistula which are very rarely met with, and still more rarely cured.

Mr. BUTLIN thought that the fistula had probably begun as a cyst in connection with the lower part of the thyro-lingual duct.

Mr. BOWLBY believed that as a general rule these cases were not really benefited by operation. The difficulty of removing the whole sinus, and the impossibility of keeping the parts at rest, led to alternate healing and breaking down, but not to cure.

Dr. DUNDAS GRANT mentioned a recent case in which he had obtained a successful result.

The PRESIDENT would avoid operative treatment if possible. The operation in itself seemed simple, but was sometimes very troublesome and often incomplete.

Mr. STEWART observed that the operation in the present case had given marked relief.

Disease of Tongue (for Diagnosis). Clinical case exhibited by Mr. C. A. PARKER.

E. W., aged eight, a schoolboy.

History: In August last the child began to be poorly, lost his appetite, and was languid, but improved under treatment. About this time the mother noticed a rash on the patient's body and thighs, which consisted of dull red spots; the largest was about as big as a pin's head, and it only lasted three days. Shortly after its disappearance the child began to complain of soreness of the tongue, the surface of which looked rough and uneven. This trouble had got steadily worse until the present date.

Family history: Father and mother both alive and well. The patient was the youngest but one of thirteen children, eight of whom are alive. Scarlet fever, diphtheria, and measles had caused the five deaths. After the third child mother had three miscarriages. No history of syphilis could be obtained as occurring in either parent, and the patient showed

no signs of congenital syphilis about his teeth or eyes, etc. There was no history of tuberculosis.

The patient's previous history was good.

Present condition: The whole of the posterior two-thirds of the tongue was covered with large bosses, about the size of an elongated sixpence, the surfaces of which were flattened, uneven, and rather paler than the rest of the tongue. They were all firm to the touch. There was no ulceration and no discharge, and no marked pain, but some tenderness. On the soft palate there were one or two smaller patches, with an area of congestion around them, less raised than those on the tongue. There were some enlarged, hard, and slightly tender glands beneath the chin and in the neck. About the buttock a few small pigmented spots, and a larger scaly spot behind the right knee. These were said to be the result of boils.

The child was otherwise in good general health. He had all the signs of post-nasal adenoid vegetation.

Mr. BUTLIN thought that the case was one of macroglossia. The youth of the patient, the papillated appearance of the central lump on the tongue, and the presence of enlarged glands all pointed to it. He did not think that any treatment was advisable at present.

Mr. SPENCER regarded the growth as an abnormal extension of the lingual tonsil. He suggested that it should be gradually destroyed at several points.

(?) *Angioma of Vocal Cord.* Mr. ERNEST H. CRISP showed the patient.

A man, aged thirty-six, who had been primarily inoculated with syphilis ten years ago. He was religiously under treatment for two years, and the secondary symptoms, which were mild in character, entirely disappeared.

Three years after discontinuing treatment, *i.e.*, about five years from the primary inoculation, he complained of pain in the larynx, about the level of the left vocal cord. He was again treated constitutionally and rapidly recovered, and had no recurrence of symptoms until on December 30th, 1892, *i.e.*, ten years after origin of disease, he consulted Mr. Crisp.

On examination the pharynx and soft palate were in a red irritable condition. There was subacute laryngitis, and both cords were deeply congested. Treatment with large doses of iodide of potassium and green iodide of mercury rapidly reduced the more acute inflammatory processes, but both vocal cords were left congested, and showed defective movement. The voice was husky, but there was no particular pain. Under the influence of local application the congestion of the right vocal cord entirely disappeared, but no treatment up to the present had cured the red raised condition of the left vocal cord.

The diagnosis lay between chronic congestion and angioma of the cord. Could it be improved by means of the galvano-cautery?

Mr. CRESSWELL BABER thought that the swelling was simply syphilitic thickening, and that canterization was not called for.

Chronic Congestion of the Larynx. Dr. F. W. BENNETT (Leicester) demonstrated this case.

A. B., aged forty-seven, saddler. He had always lived a temperate life. There was no history of syphilis or of tuberculosis. He became slightly hoarse about May last, and with slight variations this has been progressive. On examination about six weeks ago there was a general congestion of the larynx. The anterior extremity of the right cord was thickened and red, and there was a slight thickening of the tissue below the level of the cord. The movements were slightly tardy, but equally so on the two sides. This redness did not subside with the treatment adopted. The opinion of members of the Society was invited as to the nature of the case, and especially as to whether this slight fulness was more than could be accounted for by a catarrhal process.

The PRESIDENT thought that much of the impairment of movement was of a neurasthenic character. He suggested that the patient should be taught to speak in a deeper tone than normal, a mode of treatment often successful with boys at the period of "broken voice." The congested condition was probably catarrhal.

Early Epithelioma (?) of the Vocal Cord. Mr. CHARTERS SYMONDS exhibited the patient.

A man, aged forty-eight, who had complained of a little hoarseness at times during the last two months. He had taught for some years in a Board school, and now was an inspector. In addition to this he used the voice a good deal on Sunday. In July the larynx was examined by Dr. Warner of Woodford, who saw nothing amiss, but in September observed the condition now present. On the left cord at the processus vocalis was a nodular elevation with a depressed summit. It resembled pachydermia laryngis closely, but seemed to differ somewhat from this affection in its nodularity. The colour on the whole was pale. The cord moved freely, and the voice was clear. The opposite cord was free.

The condition was either an early epithelioma or a stage of pachydermia, and Mr. Symonds had advised rest of the voice and further observation, in the hope that it would prove to be pachydermia laryngis, and not epithelioma. The special point in favour of the latter diagnosis appeared to be the nodular character of the growth.

Dr. MILLIGAN thought that the case was either pachydermia or epithelioma. He thought that the latter was the correct diagnosis, and would advise thyrotomy and removal of the cord.

Dr. SPICER suggested endo-laryngeal removal, and if that should prove unsuccessful he would perform thyrotomy.

Dr. HILL observed that if the condition was pachydermia the amount of swelling indicated long duration of the disease.

The PRESIDENT felt absolutely certain that the case was simply pachydermia. A malignant growth on the inner side of the arytenoid cartilage was not compatible with such free movement. The patient was not suffering in any way, and there could be no need to operate unless the condition got worse. He would simply advise rest to the voice, and a course of iodide of potassium.

Mr. SYMONDS intended to pursue a waiting treatment, as he did not regard the case as malignant.

Tubercular Disease of the Larynx. Mr. CHARTERS SYMONDS also showed this patient.

A man, aged thirty-five, with extensive swelling of the left arytenoid, and ulceration extending down to the cord. The noticeable features were the small amount of distress and dysphagia, and in this particular the resemblance of the disease to syphilis.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held on Wednesday Evening, November 28th, 1894.

Dr. D. BRYSON DELAVAN, *Chairman.*

SECTION OF LARYNGOLOGY AND RHINOLOGY.

The Woodruff Apparatus for Exercising the Apices of the Lungs and for Pulmonary Gymnastics.

Dr. H. H. CURTIS demonstrated this apparatus. It consists of a skeleton closet, in which the patient stands, with a large pad so arranged as to compress his abdomen; this elevates the chest, and the respiratory function is carried on without the aid of the abdominal muscles. By this means the apices of the lungs are exercised, and the breathing capacity of the chest considerably increased. Dr. Curtis said that he had found the apparatus serviceable in incipient phthisis with beginning consolidation at the apex, and also for the purpose of teaching the art of proper respiration to singers, public speakers, etc. In the treatment of disease at the apex it was an excellent substitute for the pneumatic cabinet.

Dr. WILLIAM K. SIMPSON exhibited a *Modification of the Mathieu Tonsillotome*, manufactured by Mr. Ermold, of New York.

The instrument had been simplified, so that it could be more readily disinfected, and three different sized blades could be attached to each instrument.

Dr. T. P. BERENS exhibited the *Septum Knife* of Luc, of Paris.

The Chairman, Dr. DELAVAN, exhibited an *Adenoid Knife*, which was so arranged that a loop knife of any shape or size could be attached to a universal handle, and by means of a set-screw could be fixed at any perpendicular plane, while at a certain part of the shank of the holder the metal was slightly malleable, so that it could be bent at any angle.

A Case of Laryngeal Tuberculosis cured by Krause's Method.
Presented by Dr. J. W. GLEITSMANN.

The patient was first seen in May, 1888. She was suffering from extensive tubercular ulcerations of the epiglottis, palate and tonsils, the left side of the tongue, and the arytenoid folds. Scrapings from these

ulcerations were submitted to three pathologists, and each reported that tubercle bacilli were present. She was treated by means of the curette, applications of lactic acid, and the galvano-cautery, and under these the lesions disappeared until February, 1889, when a small ulcer appeared on the left tonsil. This was treated in a similar manner, and the woman was free from symptoms until February, 1893, when a small lesion made its appearance on the right tonsil, which proved to be tubercular. This also had disappeared under the above treatment, and thus far had not returned.

Fracture of the Larynx.

Dr. THOMAS J. HARRIS presented a patient, aged forty-four years, a musician; family and personal history negative. Three years ago, while playing an instrument called the baritone, he suddenly felt a pain in the right side of the neck, followed immediately by great swelling, which extended from the neck to the right ear. Coincidentally, there was loss of voice, dysphagia, and great pliability of the bones in the neck. Since the accident there had been at times a discharge from both ears, with marked deafness. He also complained of intense and persistent headaches, chiefly occipital, which are aggravated by pressure in the region of the larynx. At times the dyspnoea is very pronounced. The patient is very hoarse, and finds it almost impossible to swallow solid food. An examination of the larynx with the mirror shows nothing excepting the evidences of chronic inflammation, with some swelling of the false bands. In conclusion, Dr. Harris stated that at the time of the accident the man probably sustained a fracture of the right superior cornu.

Papilloma of the Larynx.

Dr. R. C. MYLES presented a patient upon whom he had operated for papilloma of the larynx, and exhibited the tissue removed. The patient was a man aged thirty-seven years, who began to complain of hoarseness about six years ago. An examination showed a papillomatous growth on the vocal cords, and in the upper portion of the larynx. He was operated on by Dr. Myles, in July, 1893, and again on November 9th, 1894, and a large portion of the tissue removed.

A Case of Marked Deviation of the Nasal Septum.

Dr. JAMES E. NICHOLS presented a boy in whom there had been such a marked deviation of the septum that the right naris was entirely occluded. The septum was fractured with the forceps, its attachments loosened, and then straightened and held in that position by means of a cork splint, which was worn for seven weeks. The result obtained was very satisfactory.

Disease of the Sphenoidal Sinus.

Dr. CURTIS presented a patient upon whom he had operated for disease of the sphenoidal sinus. In connection with this case he showed an instrument which he had found serviceable for the purpose of irrigating this cavity after trephining. The patient is able to introduce the tube of the irrigator into the sinus without any difficulty.

Perforations of the Nasal Septum. By Dr. A. RUPP.

The author stated that the causes of perforation of the nasal septum might be considered conveniently under five heads, as follows:—(1) Congenital or developmental influences. (2) Traumatisms. (3) Contiguous pathological processes. (4) Diseases that engender such constitutional and local conditions as are common to syphilis, tuberculosis, lupus, scrofula, rheumatism, diphtheria, fevers, etc. (5) Local inflammatory and allied processes.

Congenital or developmental perforations are extremely rare; according to certain authorities, they are of two kinds:—(a) Those that are due to perverse or arrested development; (b) Those due to a pathological process implanted on the developing tissues. Traumatisms have been known to give rise to perforations of the septum, and such a case recently came under the writer's observation. Among the contiguous phenomena which may give rise to perforation may be mentioned rhinoliths and polypi. When we come to constitutional influences, it is only rarely that scrofula, tuberculosis, or lupus cause a septal perforation, but that they may do so cannot be denied. Syphilis is a much more potent factor in the production of this lesion. Chiari, in his group of seventy-seven cases of ulcers, cicatrices and defects of the intra-nasal parts, found sixty-two of these lesions caused by syphilis, five by lupus, four by scrofula, one by blennorrhœa, one by tuberculosis, one by diphtheria, and two were due to causes that could not be found out. These figures illustrate approximately the frequency of syphilis as a probable cause of septal perforations. Like tuberculosis, lupus, and scrofula, syphilis favours the septum—especially the cartilaginous portion—in its attacks. Rheumatism has been a cause of septal perforation, so has typhoid fever, and even metastatic carcinoma, but these instances are very rare. According to some authorities, chronic coryza may lead to perforation: also acute perichondritis and abscess of the cartilaginous portion of the septum. Many authors have also reported cases of simple perforating ulcer of the septum.

As regards the treatment of these lesions, the author stated that they can be treated successfully only by doing away with the pathological influences that give rise to them, and, furthermore, by attempting to obtain the most favourable conditions, by means of general and local remedies, for aiding the recuperative forces of the local tissues to cover the losses they have sustained. Curetting, the galvano-cautery, and the application of various drugs, such as the acid nitrate of mercury, yellow oxide of mercury, nitrate of silver, etc., have been employed with more or less success. Whatever is done in this way, care should be taken not to destroy or irritate too much the healthy tissues from which reparation proceeds.

Extensive Perforations of the Bony Septum. The Chairman, Dr. DELAVAN, read a paper on this subject.

He stated that perforations of the nasal septum, situated near the posterior edge of the cartilage of the septum, and of not too great a size, are seldom of any serious pathological importance. There is a class of

perforations, however, which is deserving of more attention than has heretofore been given to it, namely, the more or less extensive injuries sometimes produced in the course of operations on the septum, and involving a loss of substance in the vomer. Such an accident is apt to occur during the attempted removal by means of the saw of what appears to be a septal ridge, but what in reality is a sharp horizontal deflection of an unusually thin septum. Instead of a ridge being removed, a long narrow opening, parallel with the floor of the nose, is made between the two nasal cavities. In several cases coming under the author's observation in which this accident occurred, the patient suffered marked symptoms of general shock, quite out of proportion to the apparent importance of the injuries inflicted. In one case particularly the reflex phenomena were very pronounced. Within twenty-four hours after the operation there was marked mydriasis of the right eye, followed later by complete paralysis of the accommodation of that eye. Several months elapsed before the eye resumed its normal condition, although the patient meanwhile was under the care of an accomplished ophthalmologist. In another case the patient suffered unduly from shock, and believed himself to have been distinctly injured by the operation. Theoretically, there is very little of anatomical importance in this part of the septum, excepting the nerve supply. The latter, however, is important, and the fact remains that, in the writer's experience, injury to it is sometimes followed by severe disturbance.

The Treatment of Deviated Septum, with Presentation of a Case. By Dr. MORRIS J. ASCH.

The operation recommended by the author for correcting deviation of the nasal septum was first described by him in a paper read at the twelfth annual meeting of the American Laryngological Association, held in Baltimore in 1890, which was practically the same as that which he employs now. It was designed to remedy the obstruction caused by a deviation of the cartilaginous septum; deviations of the bony septum must be met by other means.

The two great difficulties met with in correcting deviations of the cartilaginous septum are (1) the resiliency of the cartilage, and (2) the tendency to perforation that follows most of the methods ordinarily used. In the following operation the first difficulty is overcome, and the second does not follow. The operation is easy to perform—it takes but a short time, and does not require tedious dissection of the mucous membrane. The instruments required are a pair of cutting forceps or scissors, with a dull concave blade on one side and a convex cutting blade on the other, an elevator or chisel to break up any adhesions that may exist between the septum and the inferior turbinated body, and a hard rubber tubular splint of proper size, perforated at the sides, in order to enable it to retain its position and prevent its slipping out. The mode of operating is as follows:—The patient having been etherized, and the head drawn over the edge of the table, so as to prevent the blood from running into the larynx, and the nostrils having been sprayed with an antiseptic solution, the dull blade of the scissors is introduced into the obstructed nostril in

such a direction as to permit a crucial incision to be made, the first cut being in a line parallel with the upper lip, and the second as nearly at right angles to it as the conformation of the nose will allow. These two cuts make four triangular segments. The forefinger is then introduced into the nostril on the side in which the septum projects, and the segments are bent back into the other nostril and fractured at their base. With an Adams or any similar forceps the whole of the septum is then broken up, the bleeding checked by spraying with cold Dobell's solution, and the tubular splint introduced into the previously obstructed nostril, where it is allowed to remain for forty-eight hours without removal, the nose being in the meantime sprayed several times a day with an antiseptic solution. After the wound has healed, the patient can be allowed to introduce and remove the splint, which should be worn for two or three months. It causes no discomfort if the septum has been sufficiently broken up.

In connection with this paper, Dr. Asch presented a boy upon whom he recently performed this operation, and showed the members how readily the splint could be introduced and withdrawn by the patient.

Dr. THOMAS R. FRENCH (Brooklyn) said he would like to present this subject from a different standpoint than that taken by Dr. Asch, and to suggest the propriety of making a perforation in cases of marked deviation of the nasal septum, thus restoring the respiration through the occluded naris. His own results in the conservative treatment of deviations of this character have been far from satisfactory, and the question has come up in his mind whether it is not wiser to perforate the septum. This can only be done, of course, in a certain class of cases. It should not be done in cases where the perforation would be through an oblique cartilage, which he considered a highly objectionable procedure. In regard to the paper read by Dr. Delavan, relating to severe reflex phenomena following perforation of the bony septum, Dr. French said he recently had the misfortune to perforate this portion of the septum, and the accident was followed by no disturbance whatever.

Dr. MYLES said he was opposed to perforating the septum in order to correct deviations. Fully ninety-seven per cent. of these cases can be corrected without resorting to perforation. By this procedure, too, we are apt to replace a remediable condition by one which cannot be remedied, and we entirely abandon the art of conservative nasal surgery.

Dr. ASCH said that he, probably in common with many others, regarded perforation unfavourably. In the early days of this specialty, perforation was the accepted method of treating deviations of the septum, but the results were evidently not satisfactory, as the practice was discontinued. During recent years, rhinologists have striven to correct these deformities by conservative methods. In regard to the subject of Dr. Rupp's paper, the speaker said he had seen quite a number of cases of perforation of the cartilaginous septum, and the majority of them were non-specific.

On Rheumatic and Allied Affections of the Pharynx, Larynx and Nose.

Dr. W. FREUDENTHAL read a paper with this title. He devoted the first part of his paper to a consideration of rheumatic affections of the

larynx. These, he stated, are few in number, and have been described under various names by different writers, so that considerable confusion regarding them exists. Among the most common of these affections is rheumatic laryngitis. In predisposed individuals, the rheumatic laryngitis may be for weeks or months the only symptom of rheumatism, and this very probably is the reason why the correct diagnosis is so seldom made. Under this heading (rheumatic laryngitis) the author also reported a case of paralysis of the left vocal cord, due to rheumatism. Another class of cases, widely different from these exudative inflammations, are those of articular rheumatism of the larynx. This affection is easy to diagnose when other parts of the body are also affected, but when the disease is limited to the larynx alone, it is sometimes very difficult to make a diagnosis. After referring to several cases of chronic rheumatism of the larynx, and to a few in which the affection was of lithæmic or gouty origin, Dr. Freudenthal passed on to rheumatic affections of the pharynx. He referred to the discussions that have taken place on this subject, and said it is now an established fact that angina is often the forerunner or the initial stage of rheumatism, and we speak of rheumatic angina just as we speak, for example, of scarlatinous angina. These cases of pharyngitis, of rheumatic origin, are not at all uncommon. There is another pathological condition, which the author said he has repeatedly seen during recent years, and which he is unable to interpret in any other way excepting that it is due to rheumatism. The lesions referred to are benign ulcerations of the pharynx, which he has only met with in persons affected with chronic rheumatism, and which promptly disappear under anti-rheumatic remedies. These ulcers have been described by Heryng under the above title.

Before concluding his paper, Dr. Freudenthal took up the subject of rheumatic affections of the nose. He stated that while he has been unable to find any reference to such cases in literature, there is no reason why they should not exist. A number of cases have come under his observation in which the symptoms of nasal rheumatism were distinct and unmistakable. Two varieties of the disease were noted—one with visible changes in the nose, and the other without such changes. The changes consisted of a swelling of the lower and middle turbinated bodies, which obstructed the breathing, and which could not be reduced with even strong solutions of cocaine. In all the cases the pain in the nose was very severe, and all were associated with attacks of articular rheumatism affecting various joints in the body. In all of the cases, too, anti-rheumatic treatment was the only one which had any effect on the nasal symptoms.

BERLIN MEDICAL SOCIETY.*Meeting, June 20th, 1894.*

VIRCHOW showed (1) the specimens from a patient, whom Prof. J. Wolff had previously shown to the Society as cured, after total extirpation of the larynx for carcinoma. There was no return in the larynx—the whole larynx and what belongs to the larynx was wanting, and was replaced by a large cicatrix, the external opening was also cicatrized, and the lymph glands of that region were quite free. But in the right lung, upper lobe, was a large metastatic tumour, in close relation to the right bronchus, and just beginning to break down. Another metastasis was to be found in the femur, just below the trochanter minor. Here was also a fracture, the line of fracture being filled out with cancerous masses. This was a case of alveolar cancer with almost epidermoid cells, and with protozoa-like structures. The explanation of the metastasis in the lung was most likely that at the time of the operation an implantation in the upper lobe of the right lung had already taken place. It was also possible that the tumour in the lung was primary. (2) Showed a larynx removed by Thiersch for carcinoma, and the other organs from the case. The patient remained perfectly cured for four and a half years, then died of pneumonia. The epiglottis was retained, the cicatrix lying considerably deeper.

J. WOLFF had operated on his patient in October, 1891. In the middle of March of this year a painful swelling of the thigh appeared, which another surgeon had tried to extirpate, but had failed. Thereafter growths and breaking down of the tumour had increased rapidly till May 20th, 1894, when patient—cachectic—died. The metastasis in the lung had not been diagnosed. Besides this case there were eleven others of recovery after total extirpation. Of these, six had died of apoplexy, pneumonia, inanition, alcoholism, and phthisis; none from metastasis. In a case of Thiersch's there was besides a local recurrence, a metastasis in the left lung, and in the vertebræ. Five others after total extirpation had recovered, and were still alive. Two by Gussenbauer, one and a half and five years since operation; by Fischer, three and a half years; by Schede, four years; and Bergmann, four years. *E. Meyer.*

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THYROIDITIS ACUTA SIMPLEX.¹

By HOLGER MYGIND, M.D.

ACUTE inflammation of a previously hypertrophied thyroid gland, to which disease alone the name of *strumitis acuta* should be applied, is not uncommon, especially in those districts where goitre is endemic. It is, on the contrary, extremely rare to meet with an acute inflammation of a previously healthy thyroid gland. The most correct name for this latter disease is undoubtedly *thyroiditis acuta*. Besides this name, which Joseph Frank first made use of in his large work, "*Praxeos Medicæ Universæ præceptæ*" (*thyroiditis nobis est inflammatio acuta corporis thyroidei, vel cellulosa annexæ, stipata tumoris partis affectæ, attactum respuentis, respiratione difficili, deglutione dolorifica ac febre*, numerous others have been used in reference to the acute inflammation of the healthy thyroid gland; for instance, *inflammatio glandulae thyroideæ* (Baillie), *cynanche thyroidea* (Ph. Fr. Walther), *thyreophyma acutum* (J. P. Frank), *angina thyroidea* (Weitenweber), and acute enlargement of the thyroid gland (Barlow²), and also, though incorrectly, the terms *struma inflammatoria*, and *strumitis acuta*. Finally, several authors have erroneously made use of the term *thyroiditis acuta* in describing cases of acute inflammation of a struma, i.e., cases of *strumitis acuta*.

Lücke is the author who gives the most detailed description of acute inflammations of the healthy thyroid gland. He divides them according

¹ Read before the Copenhagen Medical Society, November 6th, 1894.

² Barlow, however, spoke of the case which he described in the Clinical Society under the name of "acute enlargement of the thyroid gland," as being an "acute inflammatory swelling of the thyroid gland," in which diagnosis Sir James Paget concurred after having examined the patient in question.

to their etiology into three forms, (1) the idiopathic, (2) the traumatic, and (3) the metastatic. It seems to me, however, that a classification based upon pronounced clinical and morbid anatomical peculiarities would be more practical, as it is often difficult to decide in individual cases how far the one or the other etiological factor has made itself felt. I purpose, therefore, in the following pages to divide the acute inflammation of the previously healthy thyroid gland into two varieties, viz., the more frequently met with *thyroiditis acuta suppurativa*, which terminates with the formation of an abscess; and *thyroiditis acuta simplex*, which terminates in resolution. This latter variety is more rare, and is identical with the cases described by Lebert as "Entzündungen der Schilddrüse mit Ausgang in Zertheilung bei vorher nicht bestehende Kropf."

Thyroiditis acuta simplex is, as mentioned above, a rare disease. Bardeleben in "Eulenburg's Encyclopædia" declares that he has never met with a case of it. I have, however, succeeded in collecting altogether seventeen cases from literature, which are tolerably exhaustively described, and which must be considered as having been undoubted cases of acute inflammation of a previously healthy thyroid gland ending in resolution. These cases were observed respectively by Bishoff (1825), Günther (1846), Cruveilhier (1849), Merchie (1852), Bauchet (1837, besides two doubtful cases), Koppe (1868), Vulpian and Raymond (1877), Brieger (1881), Zesas (1885, besides a doubtful case), Zouiovitch (1885), Barlow (1888), Tomkins¹ (1888), Charcot (1890), Given (1892), and Koranyi¹ (1892, three undoubted cases, besides one doubtful, briefly described). To these may be added one observed by myself in 1893.

C. M., a gardener, aged thirty-eight had previously suffered from the following diseases: A protracted chest trouble (phthisis?), which left a slight hoarseness, still remaining. In the course of the last four years the patient has thrice had a (rheumatic?) iritis in both eyes, lasting from three to six weeks. Last year the patient had a gonorrhœa, but denies syphilis, of which also there is no symptom. No *abusus spirituosorum*.

On the 18th of August, 1893, the patient, who for some time had suffered from a fissure at the external orifice of the nose, accompanied by eczema, was taken suddenly ill, with violent rigors, and a redness and swelling of the right side of the face in the neighbourhood of the aperture of the nose. On the 19th I found an erysipelas of the right side of the face, which afterwards spread over the whole face to the hairy part of the head, and to the neck. The temperature was about 104°, and the patient was delirious. The delirium became so violent as to resemble delirium tremens (it was, however, proved beyond a doubt that the patient hardly ever took spirits), so that on the 22nd it was necessary to send him to Blegdam's Hospital in Copenhagen, where he was put into a strait-jacket on account of his violence.

The following notes are taken from the case-books of the hospital:—

Aug. 24th: No tremor or agility. Quiet, conscious of place, but not of time. Speaks in a low voice. Redness and tenderness on both sides of the face, especially the left.

Aug. 26th: Temp. $\frac{98.7}{100.4}$ (in the rectum). Pulse 100. Delirious last evening, quiet now. Considerable cough; brings up bronchial mucus. Stethoscopy

¹ The author is very much indebted to Dr. Harding Tomkins, of Hove, and to Prof. F. Koranyi, of Budapest, for furnishing him with all the details of the respective cases observed by them.

normal. Considerable desquamation of the face. Under the right eye a small cutaneous abscess, which is opened. Albumen in small quantity in the urine. Has not been able to sleep. Chloral in the evening.

Aug. 27th : Temp. $\frac{99^{\circ}0}{98^{\circ}7}$. Is clear.

Aug. 29th : Temp. $\frac{102^{\circ}3}{99^{\circ}0}$. Continuous cough.

Aug. 30th : Temp. $\frac{100^{\circ}7}{98^{\circ}6}$. Cough less.

Aug. 31st : Temp. $\frac{101^{\circ}8}{98^{\circ}6}$. Continuous cough.

Pronounced debility. Considerable acceleration of the respiration. Respiration in front weaker on the left side than on the right. There is a distinct and tender swelling of the superior part of the front of the neck, accompanied by pseudo-fluctuating sensation, especially on the left side;¹ tenderness lower down on the neck, and at the anterior border of the left sterno-cleido-mastoideus, there seems to be a swelling.² Skin normal, easily movable against the underlying tissue.

Sept. 1st : Temp. $\frac{103^{\circ}0}{98^{\circ}6}$. Tenderness of the neck less, otherwise the same as yesterday.

Sept. 2nd : Temp. $\frac{101^{\circ}0}{100^{\circ}9}$. Tenderness of the front of the neck continues, but no fluctuation. Coughs and brings up a white frothy expectorate. Slightly hoarse.

Sept. 3rd : Temp. $\frac{102^{\circ}6}{99^{\circ}2}$. Pulse 100. Cough continues. Swelling of the whole front of the neck reaching down to the jugulum, and present on both sides of the middle line. Upwards on the left side on the border of the submaxillary region pseudo-fluctuation more distinct than before.

Sept. 4th : Temp. $\frac{102^{\circ}0}{99^{\circ}1}$. Swelling unchanged. Slight tenderness. No distinct fluctuation.

Sept. 5th : Temp. $\frac{102^{\circ}0}{99^{\circ}0}$. Desquamation of the face finished. The swelling of the neck considerably reduced upwards, but increased downwards where pseudo-fluctuation is perceptible. Urine normal.

On the same day the patient, by his own desire, was dismissed from the hospital. On the day following I saw him in his home, his condition being as follows :—

Sept. 6th : Temp. 102.2. Pulse 92, compressible. The patient has become very thin ; is perfectly clear, but speaks in gasps and is perfectly hoarse. Coughs constantly, and brings up a frothy, watery expectorate. All liquid food is gulped up as soon as swallowed, under fits of coughing ; it is impossible to swallow solid food. The patient sits half upright in bed, as he feels he would be choked if he lay down. The skin of the head and neck desquamates considerably. In the front of the neck there is a considerable swelling which, upwards, goes as far as the os hyoideum, and downwards is sharply defined towards the incisura sternalis, though a finger can be inserted between the upper edge of the sternum and the edge of the swelling. On either side the swelling is bounded by muscoli sterno-cleido-mastoidei. It is most prominent on a level with the position of the first and third tracheal ring, decreases gradually all round, but is somewhat more prominent on the inner margin of the left musculus sterno-cleido-mastoideus than on the corresponding spot on the right side. The skin over the swelling is of normal colour and not remarkably hot ; it can also be folded, though not as easily as the

¹ This swelling is best explained by the presence of an adenitis in the submaxillary region. On the 23rd of August a small tender glandular swelling was discovered close to the left angulus maxillæ.

² This is probably the commencement of the enlargement of the left lobe of the thyroid gland.

normal skin of this part. No decided movement of the swelling can be seen when the patient swallows. The whole swelling is very tender, especially on the inner margin of the left musculus sterno-cleido-mastoideus.

The pharynx is the seat of a slight acute redness and swelling.

The stethoscopic examination of the lungs showed diffused moist rhonchi.

Urine normal. The objective examination showed no other changes excepting those of the larynx described below.

Laryngoscopic examination shows the whole mucous membrane of the larynx of a bright red colour, and slightly swollen; the redness is faintest above, but increases downwards, and is deepest in the upper part of the trachea, especially on the left side. The vocal cords slightly red; the movement of the right vocal cord is normal, while the left vocal cord is fixed in "cadaveric position" during deep respiration, and only moves slightly towards the middle line during phonation, the rima glottidis forming a triangle during phonation.

Sept. 7th: Temp. $\frac{102.6}{101.3}$, pulse 104, resp. 30. The patient is obliged to sit upright to prevent choking sensations. Only sleeps in short snatches. Coughs frequently, and brings up a frothy, white expectorate. Cannot swallow solid food, liquid with difficulty, and only in a certain way, viz., by drinking a large quantity quickly, and by pressing it down, so to speak. Not only is deglutition painful, but the patient feels as if the food were stopped in the upper part of the oesophagus, consequently he takes as little nourishment as possible. The swelling in the front part of the neck is now sharply defined in its circumference, and is considerably narrower in the middle line than at the sides, assuming the clear outlines of an extremely enlarged thyroid gland. The skin is now slightly red, especially to the left of the middle line, and is so tender here that the slightest touch is painful. Pseudo-fluctuation can be felt here in the depths. The skin of the swelling cannot be folded so easily as before. Laryngoscopic examination yields the same results as before.

Sept. 8th: Temp. $\frac{102.1}{100.4}$, pulse 96, resp. 20. General condition considerably better, cough less, swallowing easier. The swelling of the neck considerably diminished; the outlines of the normal thyroid gland very distinct. Voice the same, as also result of laryngoscopic examination.

Sept. 9th: Temp. $\frac{100.4}{99.0}$, pulse 92, resp. 16, cough slight. Swallows liquid food without difficulty. The swelling diminished considerably. Skin normal in colour, somewhat pasty. Voice still hoarse.

Sept. 10th: Temp. normal, pulse 86, resp. 16. Feels perfectly well. Swallows solid food without difficulty. Cough very slight. The enlargement of the thyroid gland much diminished and sharply defined. No tenderness.

Sept. 11th: Up and well. No cough. Voice normal. Swelling of thyroid gland very slight. Laryngoscopic examination shows natural movements of the left vocal cord, and but slight redness of the trachea.

Sept. 15th: Perfectly well. Swelling of the thyroid gland scarcely perceptible.

Sept. 17th: Thyroid gland of normal size.

The patient has since enjoyed perfect health with the exception of an iritis lasting two months. There has never since been the least trace of enlargement of the thyroid gland.

Besides the above-mentioned cases there are in literature twenty-one other reports of cases described as cases of acute thyroiditis, ending in resolution; they are all, however, either so shortly or so defectively reported that it is impossible to come to any satisfactory opinion as to whether they have been true cases of the disease under discussion in this

article, or whether they have not rather been cases of hæmorrhage of the thyroid gland, or of strumitis. It is not, however, likely that the majority of these cases were other than *thyroiditis acuta simplex*, as it is most probable that the diagnosis generally was correct, but where such necessary information, as for instance, as to temperature, the duration of the disease, etc., is absent, it is at all events impossible to make use of them as a basis for a detailed description of the disease. The cases here referred to were published by Thilenius (1799), Ph. Fr. Walther (1817, three cases), Hedenus (1824), Conradi (1826), Schöninger (1823, two cases, of which the one was doubtless hæmorrhage of the gland), Weitenweber (1845; the case ended in death, but there was no *post-mortem* examination to verify the diagnosis), Bauchet (1857, two cases relating to respectively a woman of thirty, and a woman of twenty, whilst a third case, relating to a woman of thirty, is included in the true cases on page 182), Eulenberg (1860, two cases), Heidenreich (1860, quoted by Eulenberg), Guyon (1866, probably strumitis), Greco (1872), Molière (1873) Berger and Verneuil (1876, a case of strumitis), Zesas (1885, one case), Matignon (1890), and Koranyi (1892, one case).

Finally, there are in literature several descriptions of acute thyroiditis, in which the form of that disease, ending in resolution, is mentioned. Of these attention may be drawn to those by Ph. Fr. Walther, J. P. Frank, Hedenus, Hüpenden, Weitenweber, and especially to those by Lebert and Lücke, as also the French theses by Roellinger, Simon, Galthier, Rascol, and Bosco, are worthy of mention.

ETIOLOGY.—Thyroiditis acuta simplex, like the chronic hypertrophy of thyroid gland, goitre, is most frequently met with in *females*, whose thyroid gland is, as is well known, larger than that of males. Thus eleven of the cases in the first group, containing eighteen patients with tolerably minute histories of the case and reliable diagnosis, referred to females and seven to males.

Age seems also to play some part in the etiology of this disease, as it attacks preferably individuals between twenty and forty, and of these especially those between twenty and thirty years of age; in the first group of cases there is thus only one relating to a younger patient, viz., a child three years old (Barlow), and one to an older patient, viz., a female of forty-two (Günther).

As to how far *other predisposing causes* affect simple acute inflammation of the thyroid gland, it may be stated that, in the first group of cases several of the patients were stated as being weakened by various previous diseases; but others were said to have been perfectly healthy and strong individuals before the inflammation of thyroid gland developed.

Neither was it shown that any of the patients in question were born in parts where goitre was endemic, neither was there any case in which it was proved that there were relations with goitre. In none of the cases is mention made of a subsequent development of goitre.

As far as the more *immediate causes* of thyroiditis acuta simplex are concerned, it seems that this disease often appears without any visible direct cause—that is to say, as a purely idiopathic disease—or at all events without other more direct causes than such as are of very undecided

nature, for instance, "cold," "draught," etc. That "cold" is often mentioned as a cause, is, doubtless, partially owing to the fact that the inflammation of the thyroid gland begins often with the same symptoms as a catarrhal fever, and, particularly, can have a most deceptive resemblance to a severe tonsillar angina.

Rheumatic fever is the immediate cause which has been most frequently met with (Vulpian, Zouiovitch, Charcot, Given). Zouiovitch describes a *thyroidite aigue rhumatismale*, the characteristics of which were that it appeared during or after an attack of rheumatic fever, that it developed rapidly, and was of short duration, that it was not accompanied by suppuration, that its prognosis was favourable, and that it yielded to treatment with salicylate of sodium, qualities, which, as will be seen from the following, differ in no respects from those which accompany simple acute thyroiditis. Barlow's case, in which inflammation of the thyroid gland developed after a slight attack of erythema nodosum, should perhaps also be included in this group, although Barlow himself was not inclined to do so. It was in the discussion upon this case in the Clinical Society, that Angel Money stated that he had had a patient under observation, with what I have proposed to call thyroiditis acuta simplex, who had previously suffered from erythema, arthritis, and heart disease.

Two cases reported respectively by Eulenberg and Molière may possibly also be cases of rheumatic thyroiditis, but the histories published are too brief for us to be able to decide with certainty whether they should be considered as cases of inflammation, or only as such of hyperæmia of the thyroid gland. It may be mentioned further that diphtheria (Brieger), influenza (Koranyi), typhoid fever (Koranyi), malaria (Zesas), and erysipelas (case published, p. 182), may act as causes of thyroiditis acuta simplex. Further, Koranyi describes a case in which thyroiditis ending in resolution appeared during puerperal fever, together with parotitis, but as the case is but briefly described, and as it was not accompanied by pronounced difficulties in swallowing, or dyspnœa, it is doubtful whether it was not one of simple hyperæmia. This remark holds good also in reference to a case observed by Matignon, in which parotitis epidemica was complicated with orchitis, and to one described by Eulenberg where orchitis was stated to have been the cause. Finally, single cases of traumatic acute simple thyroiditis have been described (Walther, Schöninger). It is, however, most probable that these were cases of hæmorrhage of the thyroid gland.

MORBID ANATOMY.—As none of the cases reported in literature ended fatally, there have been no *post-mortem* examinations of cases of the disease in question. Luigi Porta, however, without mentioning the individual cases, states that he has, on *post-mortem* examinations of persons dead from "thyroiditis" (by which he distinctly states he understands an inflammation of the previously healthy gland), found the lobes of the thyroid gland enlarged, the capillaries injected, the veins enormously swollen, and the capsule thickened. This author also makes mention of a copious exudation of a plastic or gelatinous exudate over and under the capsule of the gland, and everywhere in the interstitial tissue, and in severe cases he also found pus.

SYMPTOMS.—The symptoms of simple acute inflammation of the healthy thyroid gland develop, as a rule, with great rapidity and severity. In general they commence by general malaise accompanied by feverish symptoms, which latter might express themselves by rigors. There are at first no distinct local symptoms, except pain in the front of the neck. As these latter are frequently of a somewhat vague character, the disease is often at first mistaken for an angina, or a catarrhal fever. The characteristic enlargement of the thyroid gland develops itself in the course of the following days, seldom later. It is at first somewhat diffuse, without sharp boundaries, the tissue around the gland being more or less infiltrated, as is plainly seen from the history of the case published (page 182). The gland enlarges rapidly, with an increase of pain and of the other symptoms, which will be described below, its outlines at the same time becoming more and more distinct. When its outlines have become quite distinct, its close connection with the trachea becomes evident, as it moves up and down with the trachea when the patient swallows. This symptom is, however, far from being invariable, or is at least not always to be observed. The size of the swelling is very different in the different cases, varying from that of a hen's egg to that of a goose's egg, but can attain such dimensions as to occupy the whole front of the neck from the maxilla inferior to the incisura sternalis—indeed, in some cases it has been impossible to fix its limits below, as it has extended down behind the sternum (Koranyi), or the clavicula (Günther). On either side the swelling extends to the inner margin of the muscoli sterno-cleido-mastoidei, and it is exceptional for it to go beyond these. The skin over the gland is not rarely the seat of infiltration, which, together with the excessive tenderness, can prevent a distinct palpation of the enlargement, but the skin is seldom œdematously swollen (Given); its temperature is often increased, whilst its colour is, as a rule, normal; it can, however, be decidedly red (Brieger, Barlow, Tomkins, own case). When this redness and a distinctly circumscribed tenderness is found on one spot where the enlargement is especially prominent, it will be readily understood that an abscess may be suspected, especially if the enlargement of the thyroid gland is elastic or pseudo-fluctuating, which is the consistency it is generally reported to have exhibited. It is seldom that the inflammation confines itself to a single lobe of the gland (Bauchet); in the majority of cases the whole of the thyroid gland is involved, the inflammation, however, as a rule, commencing or being especially developed in one of the lobes, as also in a few cases the isthmus has been first or especially attacked. It must finally be pointed out that these acute enlargements of the thyroid gland are always the seat of excessive tenderness to touch or movement; this tenderness has in some cases been so pronounced that the least palpation has given pain, and that even slight movements of head and neck have been painful, on which account the patient's way of holding his head and also his dislike to moving are often very characteristic. Spontaneous pains in the swelling appear not only in the beginning, but also sometimes later on in the disease, but the latter are, as a rule, not so severe.

The inflammatory enlargement of the thyroid gland, described above,

develops, as a rule, so rapidly, that it on the first or second day of the disease reaches a considerable size, and often attains its maximum during that time. It is not, however, rare for the swelling to increase still more in the course of the following days. Its decrease commences but seldom in the course of the second day, most frequently in the course of the third or fourth day, and but exceptionally later on; in one case only the enlargement began to diminish after the eighth day of the disease (Koranyi). The other symptoms decrease together with the swelling, and often disappear so suddenly that the course of the disease reminds one of a pneumonia ending in crisis. The last traces of the enlargement of the thyroid gland can disappear in the course of a few days (Koppe); as a rule, however, the disease lasts from ten to fourteen days from its commencement, but seldom longer (Merchie, Given, Koranyi). In most cases the inflammation leaves no infiltration, and it is but exceptionally that it leaves small, hard lumps (Koranyi). The inflammation has, in some cases, been observed to break out again after it had begun to disappear (Bishoff, Tomkins).

The situation of the thyroid gland in the near neighbourhood of several important organs (trachea, œsophagus, the large vessels of the neck, etc.) gives rise to acute thyroiditis being accompanied by distinct symptoms from these. These symptoms are principally dysphagia, dyspnœa, cough, and hoarseness.

Dysphagia is an absolutely constant symptom in thyroiditis acuta simplex, as it has been observed in all the true cases mentioned on p. 182, and it is a prominent sign of the disease. Most frequently dysphagia expresses itself by pains accompanying the act of deglutition, which symptom is often an early and pronounced phenomenon, which can at first give rise to the disease being mistaken for angina. Frequently it is absolutely impossible for the patient to swallow solid food, and even the swallowing of liquids can be extremely difficult—a circumstance which is clearly shown by the history of the case, p. 182, and which renders acute thyroiditis a most painful disease for the patient. There can be no doubt that this symptom is caused by the immediate pressure of the enlargement on the soft and pliant walls of the œsophagus, and it would seem that the cases in which the left lobe of the thyroid gland is most swollen are accompanied by the greatest difficulties of swallowing, as the œsophagus is situated nearer to the left than the right lobe of the thyroid gland. The close connection of the swelling to the trachea during its upward and downward movement in swallowing, doubtless increases the pain which accompanies this act. Finally, it is possible that the dysphagia is partially due to the infiltration which takes place in the tissue surrounding the thyroid gland. The dysphagia decreases with the enlargement of the gland, and its intensity seems to be in direct proportion to the size of the latter.

Dyspnœa is a less constant symptom, being only mentioned in about one-half of the cases reported. It is seldom very severe, generally appearing as an increase in the frequency of respiration, which is out of proportion to the temperature, and accompanied by slight sensations of choking. Occasionally, however, the dyspnœa is accompanied by

cyanosis (Brieger), or even by stridor (Günther, Given, Koranyi), which latter symptom, in one case only, was so severe that tracheotomy was thought of. Dyspnœa doubtless results from the compression of the trachea by the swelling, but perhaps the tracheo-bronchitis thus caused has something to do with it.

Cough is a much more rare symptom (Günther, Merchie, Tomkins, Koranyi, and my own case). It is, as a rule, frequent, dry, or accompanied by a slimy expectoration, and also somewhat painful from the pressure upon the tender swelling of the thyroid gland, which the cough gives rise to. It is doubtless owing to tracheo-bronchitis caused by compression, and perhaps also to propagation of the inflammation.

Hoarseness is also exceptional (Günther, Brieger, Charcot, and my own case). This symptom can naturally be referred to the above-mentioned causes, but that its origin may be another is evident from the case reported on p. 182. In this the hoarseness was mainly due to paresis of the left vocal cord. The etiology of this paresis will easily be understood when we remember that the enlargement of the left lobe of the thyroid gland was especially considerable, and that the inferior laryngeal nerve is normally situated between the lobes of the gland and the œsophagus; also that it is more exposed to pressure on the left side, because it is situated on that part of the front surface of the œsophagus which stretches to the left of the trachea. This is the only case in literature in which any mention is made of paresis of the recurrent nerve, and Galtier alone mentions the possibility of that nerve being compressed by the enlarged thyroid gland.

Finally, it might be expected that compression of the large vessels of the neck might give rise to certain symptoms in cases of acute thyroiditis. In all the general descriptions of thyroiditis acuta simplex mention is also made of cyanosis of the face, enlargement of the subcutaneous veins, giddiness, buzzing in the ears, bleeding from the nose, etc. (Walther, J. P. Frank, Hüpenden, Weitenweber, Lebert, and Lücke). These symptoms, the description of which has evidently descended from the one author to the other, are not, however, mentioned in the more detailed reports of thyroiditis acuta simplex. On the other hand, there is reason to suppose that compression of the vessels of the neck is of some significance in the frequently reported congestion of the face, also in other symptoms such as headache, restlessness, etc., although their importance has been doubtless much exaggerated.

Besides the above-mentioned symptoms, some others have been occasionally observed, especially pronounced gastric disturbances: coated tongue, want of appetite, nausea, sickness, and diarrhœa, also "catarrhal" symptoms in the form of slight nasal and pharyngeal catarrh. Rheumatic pains in different parts are mentioned now and then.

The *fever* which accompanies the disease is worthy of a more particular mention. Acute simple thyroiditis can begin, as already mentioned, with rigors (Merchie, Koppe, Zouiovitch). As a rule, however, the temperature does not rise so high and so suddenly as to give cause to this symptom. Most frequently the temperature in the rectum varies from 100·4° to 102·2°, with pronounced matutinal remissions, and

it is the exception for it to rise beyond 102.2° (Brieger, Barlow, Charcot, my own case). The highest temperature observed was 103° in the armpit (Barlow), but in this case the patient was a child aged three. The degree of temperature seems to stand in immediate connection with the size of the swelling, as it also becomes normal, or almost normal, as soon as the swelling begins to decrease. The frequency and quality of the pulse does not seem to be in direct proportion to the degree of fever. This is doubtless because the patient's general condition is, as a rule, much influenced by the tenderness of the enlargement, the dysphagia, dyspnœa, insufficient nourishment and sleep, etc. The frequency of respiration is also most frequently out of proportion to the degree of temperature, the compression of the trachea, the tracheo-bronchitis, and the patient's uncomfortable position causing a comparatively considerable acceleration of the respiration.

DIAGNOSIS.—As the symptoms of simple acute thyroiditis are exactly the same as those exhibited by acute suppurative thyroiditis in its commencement, it is often very difficult, indeed sometimes perfectly impossible, to distinguish between these two forms of inflammation in the first stages of the disease. In Barlow's, Given's, and my own case the respective observers were fully prepared for the appearance of an abscess in the gland. In my opinion, the etiology of the disease is the most important basis upon which to found a diagnosis; should there appear signs of an acute thyroiditis in the course of diseases which are known to lead to metastatic suppuration, it is highly probable that the inflammation of the thyroid gland will not terminate in resolution but in the formation of an abscess. Among such diseases puerperal fever is especially noticeable, acute suppurative thyroiditis being particularly frequently caused by that infectious disease. Pyæmia has often been found to be the cause of thyroiditis acuta suppurativa, but never of thyroiditis acuta simplex, whilst typhoid fever can give rise to either form. Rheumatic fever speaks decidedly, and no special cause or a cold, strongly in favour of an eventual inflammation ending in resolution and not in an abscess. The presence of initial rigors, high temperature, great prominence of a particular part of the gland, also redness, increased temperature, and infiltration of the skin indicate abscess; but thyroiditis may end in resolution, even when all these symptoms are present in a high degree, and in some cases it will be first possible to diagnose thyroiditis suppurativa when they have existed more than seven or twelve days.

A still greater resemblance exists between simple acute thyroiditis and strumitis ending in resolution (see page 186), the only difference indeed being that the latter attacks a previously hypertrophied gland. As it is in many cases difficult to ascertain whether the patient has suffered from goitre previous to the appearance of thyroiditis, information as to the appearance of goitre in the patient's birthplace, or among his relatives, etc., is of importance. Should an acute inflammation of the thyroid gland leave behind a diffuse infiltration, which does not disappear after a short time, it is doubtless correct to consider the case in question as having been one of strumitis, even if no information can be obtained as to a previous characteristic thyroid swelling.

Differential diagnosis as to other diseases of the thyroid gland can also present considerable difficulty. Hyperæmia of the thyroid gland in particular seems to have been frequently mistaken for inflammation of the same. Thus Eulenberg mentions the case of a man, aged fifty-five, suffering from orchitis, which disappeared simultaneously with the appearance of enlargement and tenderness of the left lobe of the thyroid gland. This enlargement also disappeared, and was followed by a swelling of the testicles, and these symptoms repeated themselves once more in the same manner. Hyperæmia of the thyroid gland, also known as *struma acuta*, does not appear to be uncommon, especially in parts where goitre is endemic (Lücke), and may be caused by over-exertion, by anomalies of menstruation, or by acute infectious diseases. Demme speaks of an epidemic of measles in Berne, in which hyperæmic enlargement of the thyroid gland was a frequent symptom. Acute hyperæmia of the thyroid gland differs from simple acute thyroiditis in so far that the swelling does not attain so great a size, that the disease does not attack the whole gland equally, and that it is not accompanied by local or general inflammatory symptoms. Finally, hæmorrhage in the thyroid gland may also be mistaken for thyroiditis acuta simplex. Thus Walther and Schöninger each report a case of traumatic "inflammation of the thyroid gland," which doubtless belong to that form of acute enlargement of the thyroid gland, the differential diagnostic peculiarities of which are the same as those described under hyperæmia.

PROGNOSIS.—The prognosis of simple acute thyroiditis is always favourable, both as to life and as to *restitutio ad integram*. Goitre has never been known to result from the inflammation, and it is the exception, as has been seen above, for it to give rise to a permanent small nodulous infiltration. Weitenweber, it is true, mentions a case of inflammation of the thyroid gland resulting in death without the formation of an abscess, but as there was no autopsy the case is doubtful.

TREATMENT.—Some authors are of opinion that an energetic, antiphlogistic treatment, with ice, leeches, mercury, ointment, etc., prevents suppuration, or so great a swelling as to cause suffocation. In the case observed by me antiphlogistic treatment was also employed. It is, however, probable that it is the character of the inflammation which is decisive, although it must always be a matter of course in this disease to make use of energetic local antiphlogosis.

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SOCIETY MEETINGS.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held on Wednesday Evening, December 26th, 1894.

Dr. D. BRYSON DELAVAN, *Chairman.*

SECTION OF LARYNGOLOGY AND RHINOLOGY.

A Case of Fibroma of the Nasal Fossa. Presented by Dr. CHARLES H. KNIGHT.

A male, aged twenty-one years, first came under observation in 1889, complaining of the usual symptoms of nasal catarrh. There was no pain, no hæmorrhage, olfaction not impaired. The left nostril was particularly obstructed. On inspection the septum was found to be somewhat deflected to the left, and far back there was a smooth, movable tumour attached to the posterior end of the inferior turbinated body. Its removal, which was easily accomplished by means of the cold wire snare, was followed by considerable improvement in the general catarrhal symptoms. There has been no recurrence of the growth. Under the microscope, it proved to be a pure fibroma. In connection with his case, Dr. Knight exhibited the specimen removed.

A Case of Nasal Osteoma. Presented by Dr. C. G. COAKLEY.

The patient was a girl, aged seventeen years, who came under observation in November, 1893, with the history that for four years previous there had been a constantly increasing difficulty in nasal respiration. There was no cough; there was a slight discharge from the posterior nares. On inspection it was found that both nostrils were occluded by a growth springing from the inferior turbinated tissue. The mass was very hard to the touch, and covered by a thin layer of mucous membrane. The posterior nares were free from any abnormal growth. With the trephine an opening was made through the mass in the left nostril; this was accomplished with considerable difficulty, on account of the hardness of the growth. In February, 1894, several small bony nodules appeared on the bones of the face and cranium, which were regarded as manifestations of tertiary syphilis. These, as well as the nasal osteoma, were benefited by anti-syphilitic treatment.

Spontaneous Extrusion of Arytenoid Cartilage in a Case of Tubercular Laryngitis. By Dr. J. W. GLEITSMANN.

The patient when first seen, about seven months ago, was suffering from extensive tubercular disease of the right apex. Examination of the throat showed that a piece of the epiglottis had been excised. This, the patient said, had been done by a physician some years before, presumably for papilloma. At the very edge of the epiglottis there was some infiltration. To improve the patient's general condition he was sent to Asheville, N.C., where, at the beginning, he progressed favourably, but later on his laryngeal symptoms became aggravated, and he returned to New York. The left side of the larynx, posteriorly, was found to be enormously swollen, and the ary-epiglottic fold was very much thickened. For three weeks past he had hardly been able to swallow. Submucous injections of a solution of lactic acid relieved the symptoms temporarily. On December 6th, 1894, the patient expectorated a small piece of cartilage, which proved to be the left arytenoid cartilage, entirely denuded. After the exfoliation of this cartilage the difficulty in swallowing continued, due to the coughing produced, probably caused by the food entering the larynx. The patient died on December 11th.

In connection with the above case, Dr. Gleitsmann exhibited the specimen referred to.

The CHAIRMAN (Dr. Delavan) said that about ten years ago Dr. Clinton Wagner presented to the American Laryngological Association a case similar to that just narrated. In Dr. Wagner's case the cartilage was distinctly ossified.

Dr. JONATHAN WRIGHT exhibited the head of an ox. The farmer from whom the ox was purchased had stated that the animal was unable to breathe through the nose. On making a section of the head, an enormous tumour of the antrum was found, which extended backwards and inwards, completely occluding both nostrils. The growth, Dr. Wright said, was probably an osteo-sarcoma.

Dr. J. W. GLEITSMANN exhibited a new conchotome for the removal of the middle turbinated body. The instrument cut horizontally instead

of in the usual vertical direction. A full description of the instrument was published in the "New York Med. Journ.," December 15th, 1894. It is made by Tiemann & Co.

Recurrence of Lymphoid Hypertrophy in the Naso-Pharynx. Dr. F. E. HOPKINS read a paper on this subject.

He stated that the text-books, for the most part, give but little information regarding the recurrence of lymphoid tissue in the naso-pharynx after removal; some recent authorities even fail to mention it, or assert that there is no such thing. Many physicians, thinking there can be no recurrence, and influenced by the brilliant results often immediately following the operation, give the patients and friends a too favourable prognosis as to ultimate results.

Dr. Hopkins then gave the histories of three original cases in which recurrence took place after thorough removal. One was that of a girl, aged fourteen years, who, three years before, had had an attack of rheumatism complicated by a severe sore throat and an acute purulent inflammation of the middle ear, causing perforation of the tympanum. This patient had the high-arched palate so often spoken of in connection with this class of cases. In July, 1893, Dr. Hopkins operated on her under ether, removing both tonsils, and clearing out the naso-pharynx. The symptoms of obstruction were relieved, the hearing improved, and the patient gained materially in general health. She returned on May 5th, 1894, complaining of her former symptoms. Examination showed a large mass of lymphoid tissue in the naso-pharynx. Nasal respiration was almost impossible. She was again operated on under ether, and the naso-pharynx so thoroughly cleared out that it was feared the patient might suffer from the apparently too radical removal. No ill effects followed, and the patient improved rapidly. A microscopical examination of the tissue removed at this operation showed lymphoid cells only. Early in the present month (December, 1894) the patient again came back, and there is found to be a further return of the growth. It is not yet sufficient in amount to cause obstruction to nasal respiration, but there is a lack of resonance to the voice, and the hearing is again impaired. Why this tissue should have recurred a second time the speaker said he is at a loss to say, because after the second operation nothing but bare bone could be felt in the vault of the pharynx.

In addition to his own cases, Dr. Hopkins reported six cases furnished by Dr. J. F. McKernon, and others by Drs. Delavan, Butts, Wright, and Emil Mayer. He stated that there are few operators of experience who are not able to recall one or more such cases, and the chief design of his paper was to direct attention to this danger of recurrence, with the hope that greater care would be taken both in operating and in the after treatment. The speaker agreed with those who insist upon complete removal of the tissue, under an anæsthetic in children up to fifteen years of age. The operator must assure himself also that there is no obstruction in the nasal passages; if any such exists, it should be corrected. After the operation, iron should be administered for several weeks, with such remedies added as seem to be indicated, bearing in mind the possibility

of a constitutional taint of rheumatism, tuberculosis or syphilis. A further point of prime importance is that of the hygienic surroundings of the child, particularly the sleeping room.

Dr. WRIGHT agreed with the author of the paper that there is occasionally a recurrence of lymphoid tissue in the naso-pharynx, even after complete eradication. It is surprising that this should occur so rarely, when we bear in mind the pathology of these growths. The lymphoid cells of which they are almost entirely composed infiltrate all the layers of the mucous membrane down to the periosteum. Therefore, when we speak of the complete removal of adenoid growths from the naso-pharynx, and take the expression literally, we mean denuding the entire region down to the bare bone. Of course, few are prepared to operate so radically; furthermore, some very disastrous results have been reported from the too free removal of adenoid tissue.

Dr. WRIGHT said that the cases of recurrence coming under his observation he has been disposed to ascribe to imperfect removal in the beginning. As a rule, however, the ordinary operation with the forceps, followed by scraping with the finger-nail or some form of curette, is sufficient. When an appreciable amount of the tissue is left behind, subsequent irritation and inflammation may be the cause of recurrence, or it may be the result of a syphilitic or tubercular dyscrasia. In others a malignant element might be present. A number of cases had come under his observation in which there was a recurrence of tonsillar hypertrophy after removal.

Dr. W. K. SIMPSON said that Dr. Hopkins' paper emphasized two very important facts; one the necessity of completely removing the adenoid vegetations in the naso-pharynx, the other the difficulty of determining whether this has been done or not. After a certain amount of the tissue has been lacerated, it is not easy to determine with the finger whether any remains. The consensus of opinion regarding this question seems to be—leaving out of consideration any particular dyscrasia—that the recurrence of these growths depends on the fact that they have not been thoroughly removed, certain tags or shreds having been left behind. Very rarely does recurrence take place after a second operation.

Dr. R. C. MYLES said that only in a few instances has he seen any recurrence after a thorough removal under ether, and then never to the extent of producing even one-half of the objective or subjective symptoms which existed before the operation. The development of new lymphoid tissue is going on in some children all the time. The desirable thing is to find out how much adenoid tissue each child is entitled to.

Dr. COAKLEY said that in one case coming under his observation, a girl aged sixteen years, the obstruction in the naso-pharynx was very marked, projecting below the border of the soft palate. This was removed and during an examination made a few days later a small tag was seen on the left side, which was left undisturbed. Six months later the girl returned, and quite a good-sized mass was found where the small tag had been previously observed.

Dr. GLEITSMANN said he believed in the radical removal of adenoid vegetations; the more radical the operation, the better would be the

results obtained. Of late years, the speaker said, he has had fewer recurrences than formerly. It is well in all cases to give a guarded prognosis, and keep the patient under observation for some months after operation.

Dr. WALTER F. CHAPPELL said he agreed with the previous speakers that the recurrence of adenoid growths in the naso-pharynx is extremely rare, and then it is probably usually the result of incomplete removal. He makes it a practice, some weeks after the operation, to see if there is any adenoid tissue left behind, and if so, to make an application of silver nitrate.

Dr. F. J. QUINLAN said he thoroughly endorsed the statements made as to the rarity of recurrence. In two cases coming under his observation in which the recurrence was more or less marked, he found an obstruction of the anterior nares, and after removing this there was an immediate shrinkage observed of the adenoid tissue in the naso-pharynx. Anterior obstruction, he thought, may often be the causative factor of a recurrence in these cases.

Dr. JAMES E. NEWCOMB referred to an article recently published in a French journal, in which the writer recommends wiping out the naso-pharynx with the finger, around which a piece of iodoform gauze is wrapped; in this way the writer claims to wipe off many of these small tags, and get a comparatively smooth surface. Dr. Newcomb agreed with Dr. Quinlan that it is very important, in the treatment of these cases, to thoroughly inspect the anterior nares, and remove any obstruction that may be found there.

Dr. JAMES F. McKERNON said that in some instances recurrence of adenoid growths in the naso-pharynx is undoubtedly due to an incomplete operation. In the cases reported by Dr. Hopkins, however, some of which he had the opportunity of witnessing, the operation was very thoroughly performed. In one instance, the operation was done in two sittings; after removing as much of the tissue as possible, the patient was allowed to partially recover from the effects of the ether, and the vault was thoroughly examined; it was then swabbed out, and all hæmorrhage checked before the instrument was reintroduced. That case was kept under observation for several weeks, and no tags were discovered.

Dr. DELAVAN said that in certain cases a partial removal of these vegetations might possibly result in a complete cure: this, however, must be very exceptional, if we are to be guided by the results of experience. In cases where recurrence takes place in spite of thorough extirpation, there is probably some constitutional dyscrasia to account for it—syphilis or tuberculosis, and with these patients it is wise to give a guarded prognosis. This tendency to recurrence may be very marked.

The CHAIRMAN strenuously urged the importance of radical and thorough operation. While, under some circumstances, rapid operation might be better than no operation at all, it was desirable to operate carefully, and to take sufficient time. He preferred to operate under anæsthesia in young patients. He believed that so-called recurrence was often due to the use of some of the newer instruments, designed for rapid operation. With some of the most popular of these it was easy for

considerable masses of adenoid tissue to escape, and these, relieved of pressure and given ample space for expansion, would quickly swell to a size much greater than their original dimensions.

In connection with adenoid hypertrophy, there often exists nasal obstruction, especially in older children, and this should be done away with before the patient is dismissed.

Finally, he asked whether, in the experience of those present, cases already operated upon and requiring a second operation were likely, as a result of the second operation, to suffer from excessive hæmorrhage. He had heard the question answered in the affirmative, but believed that there was no foundation in fact for such a supposition.

Stated Meeting, held on Wednesday Evening, January 23rd, 1895.

Dr. D. BRYSON DELAVAN, *Chairman.*

Dr. C. G. COAKLEY exhibited an *Electric Transformer.*

It was composed essentially of a primary coil, from which the current is transferred, by induction, to secondary coils. It can be used for both cautery and lighting purposes, but can only be employed with the alternating current. The instrument is manufactured by the Montreal Electrical Company.

Dr. WENDELL C. PHILLIPS exhibited a *Trocar and Canula.*

The former, furnished at its tip with a rotary, olive-shaped burr, is intended for entering the ethmoidal cells and frontal sinus. It was devised by Dr. A. W. Palmer, of New York.

Dr. ROBERT C. MYLES exhibited a *Trocar and Canula* of small size and of very elegant construction, for puncturing the antrum of Highmore.

It is so arranged that the tube of an irrigator could be attached easily to the canula, the latter being *in situ*. The instrument is made by Meyrowitz. He also showed a modified small cutting forceps for the removal of the turbinated body. Also a number of sharp ring-curettes, of different sizes, with malleable handles, which he stated he had found useful for the purpose of curetting and probing the accessory nasal sinuses.

Congenital Partial Occlusion of the Vault of the Pharynx.
Presented by Dr. WENDELL C. PHILLIPS.

The patient was a girl, aged sixteen years, who first came under observation on January 9th, 1895. Family history negative. Her mother states that during infancy the child's breathing was not noticeably bad. About ten years ago she first became aware of some difficulty in nasal breathing. She never had any illness excepting a mild attack of measles. She frequently suffers from frontal headaches, although not very severe.

The rhino-pharynx presents an almost complete occlusion of a fibro-

membranous character, with an aperture in its centre about five-eighths of an inch in diameter, through which the posterior border of the vomer is visible. It extends from about the junction of the hard and soft palate upwards and backwards to the posterior wall of the pharynx. The occlusion, Dr. Phillips said, is probably congenital, as there is no history of any severe illness or injury, and an absence of any serious inflammatory attack.

A Case of Empyema of the Frontal Sinus. Presented by Dr. THOMAS J. HARRIS.

The patient was a woman with an empyema of the right frontal sinus, with necrosis. The ethmoidal cells were also involved. When the patient first came under observation the disease was already far advanced. There was a large swelling anteriorly, with almost complete occlusion of the right eye, and both nostrils were filled with pus. Under ether, free communication was established between the nose and the frontal sinus, and through an opening above the eye the cavity was thoroughly curetted. For additional drainage an opening was also made on the inner side of the orbit. At present the external opening into the sinus is gradually healing, and the discharge of pus from the cavity has almost entirely ceased.

A Case of Sarcoma of the Naso-Pharynx. Presented by Dr. JAMES E. H. NICHOLS.

The patient was a man who had been presented to the section last spring after an operation. Following this there was a recurrence, and last August Dr. Nichols excised the superior maxilla on the right side, and removed the entire growth, which sprang from the sphenoidal cells and extended as far as the left pterygoid fossa, involving the orbital plate. The patient had complete relief until recently, when it was found that recurrence had again taken place in the anterior fossa of the skull. The case is now an inoperable one. Dr. Nichols said he expected to try the erysipelas toxines, although he hardly expected good results from their use.

A Case of Antral Disease. Presented by Dr. MYLES.

The patient was a woman, forty-eight years old, who at thirteen began to have facial neuralgia, which lasted about six years and was very severe. At that time the upper teeth were extracted, with a part of the alveolus, and the pain then disappeared until nine years ago. Every spring, for the past eight years, she has had very severe attacks of right facial neuralgia, which lasted for from one to three weeks. In June, 1894, when she came under Dr. Myles' observation, her pain was excruciating. She stated that on several occasions she had had a copious discharge of muco-pus from the right side, attended by a sense of fulness and dulness in the antrum, and severe occipital headaches. In June the antrum was opened through the malar ridge. The bone was soft and had an uneven surface, bulging outwards. There was a little muco-pus in the cavity, with slight granulations and small roughened areas. The cavity was irrigated and kept open. The pain disappeared and the patient was com-

fortable until the fifth of the present month, when the pain returned with all its original intensity. The tissues, which had contracted over the opening in the bone, were removed, and the cavity again curetted, removing a quantity of tissue which resembled an osteo-sarcomatous excrescence. Since then the pain has not been felt. The tissue removed is now being examined microscopically.

The Effects of Deafness in Others upon the Child's Voice. By Dr. D. BRYSON DELAVAN.

Nothing is more fatiguing, the author said, than conversation with the partially deaf. Even those who have arrived at adult life will frequently become tired and hoarse from it. With full appreciation of the position of the deaf person, and sympathy with him in it, there is still another side to this question which should not be lost sight of, namely, the effect of deafness upon those habitually associating with the patient.

Dr. Delavan said the evil results following the practice of allowing children to force their voices in order to converse with the deaf have often been brought to his attention, and he cited a few marked cases in order to fully illustrate the subject. To completely understand the matter, it is necessary to consider the conditions of the throat and voice more or less peculiar to the earlier years of life, namely, that, in the first place, the child's throat is a small and delicate structure that is more abundantly supplied with blood than is the throat of the adult, and decidedly more liable to acute disease. When there is already any tendency to weakness or inflammation of the larynx, as is very often the case, improper or violent use of the voice is sure to aggravate the trouble, for under these conditions the inflammation is continued and increased, and the delicate parts which regulate the production of tone are weakened and impaired. Again, the child through ignorance is unable to use his voice so as to produce the best results with the least fatigue, and an amount of talking which might easily be accomplished by a well-trained adult would greatly overtax his feeble powers. Unlike the adult, too, he is likely to fail to appreciate the extent of his fatigue, and for this reason, as well as through lack of independence and of that command of a situation which enables an older person to bring a conversation to a close, would continue talking long after he should have ceased.

Thus it happens that a child who is much in the company of a deaf person will often become affected with chronic inflammation of the larynx—one of the most stubborn of diseases and a condition attended with greater or less injury to the voice. To obviate this, the use of a speaking tube or some other similar appliance cannot be too strongly urged under such circumstances, and the child, if obliged to converse at all, should rarely if ever be allowed to address the person without it. He must also be taught how to use his voice to the best advantage, without straining it. He should not be allowed to speak too loudly, nor for too long a time, and when his throat is congested or inflamed he should be prevented from speaking to the deaf person at all. If the throat has already suffered from the abuse inflicted upon it, the child must be removed from the deaf person, or at least be prohibited from conversing

with him, while such treatment must be employed for the throat as shall restore it as soon as possible to a healthy state.

Diseases of the Accessory Nasal Sinuses, with Suggestions regarding their Treatment. Second Paper. By Dr. ROBERT C. MYLES.

This paper, the speaker said, might be considered as a continuation of the one read before the section in January, 1893. It contained a further record of his experience with diseases of the accessory nasal sinuses. A correct diagnosis and the best treatment to be employed are the things we should strive for. Prior to ten years ago, not five per cent. of these cases were correctly diagnosed. As an aid to diagnosis the electric lamp, though often deceptive, is valuable, especially in antral affections. Since the opening of the antrums and the sphenoidal cells are in the upper part of their walls, it is necessary to bend the head downwards in order to obtain the greatest flow. In all suspected cases, where the diagnosis cannot be made from an orificial discharge or other symptoms, or by transillumination, irrigation should be resorted to either with the syringe through the normal opening, or with the trocar and canula passed through the wall of the antrum, in the middle or inferior meatus, and in extreme cases through the canine fossa. Other things being equal, irrigation through the natural opening should be tried in nearly all cases for a while, and be persisted in for a few months in those cases where the returned fluid contained decaying cheesy mucoid masses, and which show rapid improvement in the symptoms. On the other hand, when the irrigating fluid returns on succeeding occasions laden with mealy, offensive pus, it is wiser to make an opening at once, eight or ten millimètres in diameter, through the malar ridge where the tips of the first molar roots are situated. In the event of the first molar tooth being in place, the canine fossa would be the next point of election.

The most peculiar circumstance about cases of chronic antrum empyema is that the patients seldom complain of pain in the region of the superior maxilla. When pain exists, which is only occasionally, it is referred to the supra-orbital, temporal, or post-occipital region. In cases of chronic disease of the frontal sinus, pain is almost invariably present, and is increased by bending the head downwards. In ethmoidal and sphenoidal disease, a dull pain is usually located beneath the bone through the deep temporal and occipital regions.

Under the heading of treatment, the author classified the various pathological conditions met with in these cavities, and suggested the treatment which in his experience has been demonstrated to be the best.

1. Acute catarrhal, suppurative or infectious sinusitis, without complete stenosis of the normal outlet. These cases are very common and come on after the manner of an ordinary cold in the head. The ordinary treatment for a severe cold is the best. The rational treatment is one of prophylaxis, which consists in reducing and removing the intumescent and abnormal tissues within the nose during the intervals of the attacks.

2. Acute catarrhal, suppurative or infectious sinusitis, with stenosis. These cases, besides requiring the ordinary treatment, demand the evacuation of the retained secretions at once.

3. Subacute, chronic catarrhal or suppurative sinusitis, with moderately obstructing stenosis, thickened mucosa, with or without retained decaying puro-mucoid *débris*. This class of cases is the most fruitful source of post-nasal catarrh. Attempts should be made to irrigate these cases through the natural openings, and failing in this, a counter-opening should be made in the cell walls, and proper curettage and drainage carried out.

4. Polypoid degenerations. This class furnishes by far the majority of operative cases. Large counter-openings, packing, careful and repeated curetting, good drainage and irrigation are essentials for successful treatment.

5. Odontic periostitis and periodontitis, sometimes terminating in caries and necrosis. It is universally conceded that the offending tooth in this class of cases should be removed, and if the case is one of long standing the cavity should be opened, carefully curetted, and dressed. The author said he took it for granted that everyone would prefer the lower border of the malar ridge for penetration in all cases where the tooth has been absent for some time. The canine fossa, where the bone is very thin, is the next point of preference. The main disadvantages are its distance up under the cheek, and the elevation of the opening above the floor of the antrum.

6. Atrophic rhinitis. The bacillus of atrophic rhinitis frequently finds a permanent home in the sinuses. Two kinds of cases are apparently caused by this affection: one, in which the semi-solid putrid *débris* has become confined in the cavity and acts as a causal factor in keeping up the diseased condition; and the other, in which the tissues have undergone degenerative changes. Irrigation will frequently relieve the first; curetting and drainage would be necessary to restore the latter.

7. Tumours occasionally develop within these cavities. Early diagnosis is of the greatest importance, for it frequently enables the surgeon to save the patient's life by timely removal, and rescues him from a condition of intense pain and distress.

8. Syphilis. Gummata frequently develop in the walls of one of the accessory sinuses.

Before concluding his paper, Dr. Myles read the histories of a number of cases of disease of the accessory nasal sinuses coming under his observation, and exhibited several anatomical specimens.

Dr. EMIL MAYER said he had recently had under his observation two cases of antral disease which illustrate the two principal forms of this trouble. In one case the disease was chronic and in the other acute, and both of them he was able to treat through the natural openings. In the former case there was a very offensive discharge, which ceased after thoroughly curetting and washing out the cavity, the inferior turbinated body being first removed. The latter case was recognized within a week after the onset of the symptoms, and the result was equally satisfactory. Dr. Mayer said that if these cases were seen and recognized sufficiently early, and treated through the natural passages, the chronic cases would not occur nearly so frequently as they now do.

Dr. COAKLEY had seen several cases of antral disease. He did not

believe in removing a sound tooth in order to enter the cavity. An opening, sufficiently large and low down, in the canine fossa is usually sufficient. Opening through the alveolar process he does not think advisable, on account of the difficulty in causing it to heal. In one case where a tooth had been withdrawn he drilled through the alveolar process and found the bone very much thicker than he had anticipated; in that case it took over a year for the sinus to close.

Dr. PHILLIPS' experience with them had taught him that whenever it is possible to treat them without operation it is advisable to do so. He expressed the opinion that acute inflammations of these sinuses, especially of the maxillary, are of common occurrence, and often go unrecognized. In one case recently coming under his observation transillumination helped to confirm the diagnosis of antral disease, and the patient was successfully treated through the natural opening. In many of them operation should be the last resort, because it is apt to lead to complications. One of these is the difficulty experienced in healing up the opening, especially when it is made through the alveolar process. In cases where there is a polypoid condition, or necrosis, an operation must of course be resorted to.

The CHAIRMAN (Dr. DELEVAN) said that he regarded transillumination as a valuable aid in reaching a diagnosis. While absolute dependence could not always be placed upon it, it is often helpful, and in some instances quite corroborative.

Dr. COAKLEY said that in one case in which he had used the india-rubber drainage tube the lip pressing on the tube prevented free drainage, and necessitated the insertion of a tube with a large flange, by which the lip was held away from the gum.

Dr. MYLES, in closing the discussion, said that with reference to drainage, each case must be considered on its own merits. In many cases the opening made through the bone is not sufficiently large, and the tissues contract over it. Frequently, drainage tubes will not act well, and it may be necessary to remove them for a time. The irritation of the tube may give rise to a fungating condition about the margin of the bone. As it is impossible to fill up the antrum of Highmore with granulations, we must have a cicatricial tissue in place of the mucous membrane that has been destroyed or curetted, and this often takes a long time to form.

THE BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

Twentieth General Meeting, held January 11th, 1895.

President—Dr. W. MCNEILL WHISTLER in the chair.

Twenty-one Fellows and Visitors were present.

The minutes of the previous meeting were read and confirmed.

The balance-sheet was circulated amongst the Fellows.

Dr. MACINTYRE's motion for an additional Secretary was deferred, in his absence, at his own request.

Dr. WHISTLER's deferred motion referring to the office of Treasurer was further postponed.

The proposal by the Council, "That the Annual Dinner be postponed till the Summer Meeting (to be made a special one), and that the President's Address be given at the same time," was moved by Dr. WOLFENDEN and seconded by Mr. MAYO COLLIER, and after some discussion by Messrs. WILKIN, BARK, MAYO COLLIER, and others, was carried.

The HON. SECRETARY read the report of the Otological Sub-Committee appointed to consider the amendment to Mr. Stoker's motion, and the contents of the circular which he (the hon. sec.) had issued under the Committee's directions, to ascertain the feelings of the Fellows upon the addition of Otology to the work and title of the Association. The result being, that out of a total of seventy-three, fifty-seven had replied in terms of unqualified approval, the Council recommended the adoption of the report of the Sub-Committee, with the change of title to British Laryngological, Rhinological, and Otological Association.

Mr. WILKIN moved the adoption of the report of the Council, and Mr. BARK seconded.

The PRESIDENT put the motion to the meeting, and it was carried.

Dr. WOLFENDEN. *Case of Recurrent Papilloma; Epithelioma; and Laryngo-Fissure.* (This case is exhibited to the Association to elicit an opinion as to the desirability of any further operative measures.)

A. B. consulted me in the autumn of 1892 for hoarseness, which had existed with him for nearly a year, latterly having become worse. He was aged forty-eight, of sound constitution, with no history of syphilis, and for the whole of his life had been occupied as a partner in one of the best known manufacturing businesses in London, spending much of his time in a hot workshop. There was observed laryngoscopically a pinkish-grey growth situated on the surface and edge of the right vocal cord, nearly completely covering it, the movements of the cord being perfect.

This growth was removed endo-laryngeally, with much improvement to the voice, but in December, 1892, a recurrence had taken place at the anterior end of the right vocal cord and in the anterior commissure, all of which growth was removed. During the year 1893 there were several recurrences, the larynx apparently not being free from growth for more than a month or two. In every case of removal a microscopical section was made, and there was never evidence of anything but simple and typical papilloma. Having regard to the age of the patient, and the persistent recurrence of the growth, it was frequently pointed out to him that the time would probably shortly arrive when it would be wise to open the larynx, and remove the whole growth by internal operation. So far it had (during 1893) been confined to the right vocal cord and anterior commissure, each microscopical examination had revealed only papilloma, the movements of the vocal cord had been in no way impaired, and the patient's condition as to general health was good. The possible dangers of laryngo-fissure were pointed out to the patient, and while there was nothing distinctively indicative of malignant disease he was averse to operation. From this date he came under the joint care of Mr. Richard Lake and myself.

In May, 1894, the growth appeared to be less upon the upper than upon the under surface of the right vocal cord (subglottic), though keeping a pinkish-grey, soft, and typically papillomatous appearance. But in May and June, 1894, this subglottic growth, a large portion of which was removed endo-laryngeally, showed a histological change in the portion examined—the epithelial elements showed a distinct and suspicious tendency to dip into the stroma of the growth. In this portion of the growth examined there was nothing characteristic of epithelioma, but the movement of the vocal cord was considerably impaired. This, however, improved considerably subsequently to operation, but never was recovered entirely. The voice remained hoarse. However, the condition was considered by us sufficiently suspicious to renew our suggestion of laryngo-fissure, but the patient's business engagements made him averse to it at the time.

He was seen by one or other of us two or three times between June and September, 1894, and the larynx always presented some growth projecting beyond the edge of the right vocal cord, and apparently subglottic chiefly, a small portion of growth at the anterior commissure, a little apparent papilloma on the right ventricular band, and four small and discrete papillomata on the surface of the left ventricular band.

During July, August, and September, 1894, the patient's condition remained the same, and there was no apparent increase of growth, but in the first week of October there was noticed a considerable development of the growth of the right side, the voice was almost extinct, and there was considerable interference with breathing upon exertion. Opening of the larynx was now urged upon the patient as no longer possible of delay, and accordingly on October 17th, 1894, he was put upon the operating table, high tracheotomy performed, a Hahn's canula inserted, and the thyroid cartilage incised. This was found to be soft and infiltrated considerably in the lower and right portion with growth, and the little pre-

thyroid gland was distinctly cancerous. There were, however, no other glands involved. As much of the cartilage was cut or scooped away as appeared to be involved, and with knife and scissors those parts of the interior of the larynx were freely removed that were invaded by new growth, and the whole was afterwards thoroughly cauterized with concentrated chromic acid. The parts were not sutured, and it was intended to leave the patient in Butlin's position, and remove the Hahn's cannula.

Deglutition was rather difficult and a good deal of fluid found its way across the larynx on swallowing. Hahn's cannula, which was removed the day after operation, was therefore replaced, being worn by the patient with much more comfort than an ordinary tracheotomy tube. The patient was kept in a recumbent position, and deglutition was rendered easy by adopting the position recommended by me some years ago in the dysphagia of laryngeal phthisis—viz., lying on the belly, with the head low and feet high.

The patient made a good recovery, without any signs of bronchitis, etc., and ten days after operation the tube was permanently removed, and the patient allowed up for a time daily.

During December he was well enough to go to his place of business, without pain or discomfort, and with some return of voice, which, however, was low, gruff, and hoarse. Gradually the breathing has become more stridulous, which may be attributed to the falling in of the right side of the larynx, owing to removal of a portion of the thyroid cartilage, and to the presence of a cicatricial band of tissue extending round the base of the epiglottis, and the right side of the larynx to the right arytenoid cartilage, which was not removed. The glottic chink is now wavy and not very large, the contraction of the parts accounting for the dyspnoea. While there is no sign of return of growth upon the right side of the larynx, there has been a recurrence of papilloma (microscopically examined) upon the left ventricular band, which has been freely removed endo-laryngeally.

In the first week of January the patient apparently caught cold, and had a sudden attack of laryngitis with considerable inflammatory swelling of the soft parts of the larynx, which, along with the contraction from operation, rendered breathing difficult, especially at night. The application of Leiter's coil reduced this very quickly, but the question which now arises is, is it desirable, in view of the development of further papilloma in the left ventricular band, to again open the larynx and clear away the affected tissues of that side, or to limit any further interference to the insertion of a tracheotomy tube? The portions of the growth removed on October 17th leave no doubt as to its epitheliomatous nature.

The moral of the case is obvious—that much earlier operation would have been desirable. Up to May, 1893, the growth appeared to be limited in situation to the parts above the vocal cords, but the revelation then of a sub-glottic growth, which renders it probable that the disease had been sub-glottic for a long time before it actually declared itself, seems to point to the view that if the patient's consent had been given to very early laryngo-fissure the result might have been more favourable.

The case will be subsequently reported in greater detail.

Dr. WOLFENDEN. *Curious Malformations of the Pharynx.*

Case I. : The patient was a man aged twenty-four, a dairyman by trade, who came to me on November 21st, 1887, complaining of slight sore throat, which was due to a little subacute pharyngitis. Examination of the throat revealed a very curious condition. From the posterior aspect of the soft palate above to the posterior faucial pillars at each side, and attached below apparently to the glosso-epiglottic ligaments, was a fleshy septum, completely cutting off the naso-pharynx from the oral pharynx, completely hiding the posterior and lateral pharyngeal walls, and almost cutting off the œsophagus from the mouth, except that there was an arched opening just above the epiglottis, which, though only a little wider than the epiglottis and three-eighths of an inch from top to bottom, apparently allowed the passage of food perfectly. There was an opening from the pharynx into the naso-pharynx by a slit, vertical in direction, and in a state of repose constantly open, and which lay behind the uvula, which depended from the soft palate in a perfectly normal condition. Through this opening a little of the mucous membrane of the naso-pharynx could be seen, and so far as was visible it was perfectly normal. The membranous web was not apparently attached to the posterior pharyngeal wall at all. It was fairly thick, though not so thick as an ordinary syphilitic palatal adhesion, and of the appearance and colour of normal mucous membrane, smooth, moist, and red. The opening in the inferior part was arched, and the epiglottis lay in its inferior aspect, perfect and free. It was remarkable that, with such a small opening as this, the patient should never have experienced any difficulty in swallowing. The man was not himself aware that he possessed any anomaly of the throat. He was robust, well-grown, and in good health, and no history of syphilis, diphtheria, or antecedent ulceration could be obtained. He had never, to his knowledge, been ill. There was no dyspnœa or dysphagia, and never had been any symptom to call his attention to it. I should have cut through the membranous web had the patient remained under treatment, but he disappeared after a couple of visits, and I never saw him again. At the time I was inclined to think it a congenital anomaly in the absence of any antecedent condition to account for it.

Case II. : In the same year I saw another case, occurring in a young girl of about fifteen years of age. She had a membranous web extending right across the back of the throat from behind one posterior faucial pillar to that of the other side, free above, but attached below to the posterior pharyngeal wall about the level of the epiglottis. The entrance into the œsophagus was quite free, and so was that into the naso-pharynx, but the membrane formed with the posterior pharyngeal wall a sort of pouch, extending from one side to the other, into which a probe or tampon could easily be introduced to its bottom.

As in the preceding case, there was no history of syphilis or diphtheria, or any antecedent ulceration of the throat. The girl had always enjoyed good health, and I was inclined to believe this case also congenital. In both cases the condition had arisen beyond the knowledge of either patient, and neither of the children had been subject to any disorders

within their recollection. In neither case was the slightest inconvenience caused by this anomalous condition.

I merely mention these cases to this Association because Mr. Lennox Browne brought forward a case of congenital malformation at the last meeting which he considered to be unique. Both these cases have as much reason to be considered congenital as the one reported by Mr. Browne, and though they occurred in my practice over seven years ago, I never recorded them before.

MR. LENNOX BROWNE: As I have often said, Mr. President, I think one is placed at a great disadvantage in offering an opinion on a case under the circumstances of its being brought before this Association, because the Fellow who brings the case has had long experience in watching it—in this case, for two years and a half—and, therefore, any opinion given on a cursory glance and short conversation, with many distractions, is, of course, to be taken with a considerable amount of discount.

I pass over any clinical or pathological points of interest that might suggest themselves as to the character of the disease in its early stages, as opposed to its later, and would simply express for myself, and, I am sure, for all the Fellows of this society, our thanks to Dr. Wolfenden for the exceedingly interesting case which he has brought before us, as well as the beautiful sections illustrating the pathological characters to be found after the growth was removed. As to the future, I entirely agree with Dr. Wolfenden's suggestion that it would be much better to do a simple tracheotomy. I cannot think that any resplitting or further attempt at radical measures would be in the best interests of the poor gentleman who is the sufferer, for I suppose we are all agreed that we could not do very much to prevent the inevitable termination. I do think that in view of increasing stenosis, and of the stridor, a provisional operation would still longer prolong his life. I would deprecate entirely any attempt at tubage, because with the disposition to further papillomatous development, which Dr. Wolfenden says has occurred, the passing and keeping of a tube in the glottis would probably be not only painful, but would be calculated to further excite proliferation of whatever character it may be, whether benign or malignant. There can hardly be two opinions that one would be bound to do a tracheotomy at an early date, and that is what I understand Dr. Wolfenden proposes to do. I can hardly think there will be any disagreement in that proposition.

THE PRESIDENT: Looking at the case, it seems to me that it is just one of those in which further operation for removal of the growth would not be likely to give a good result. I quite agree that the only treatment now would be to do simple tracheotomy. I have had advanced cases of this kind where tracheotomy has prolonged life; in one case for a year and a half. The one I refer to was in the same stage as this case, and it ended afterwards by extension to the œsophagus.

DR. WOLFENDEN'S reply: I am much obliged for the kind interest taken in and for the opinions given on the case I have brought before the society. I do not think it is desirable to do any further operation on a

large scale. The only other operation would be excision of the larynx, which is a particularly unfavourable one, as we all know. I was inclined, and am still more inclined now, to put in a tracheotomy tube as soon as occasion arises, and to leave it so as to give rest to the larynx and relieve the breathing. I quite think it may prolong his life, for two years possibly ; at any rate, he has a better chance in that than anything else.

MR. WILKIN. *Old Case of Syphilitic Laryngitis associated with Gumma of Apex of the Right Lung.*

This patient was admitted to the London Throat Hospital, under my care, on the 6th February, 1894, being sent in by a general practitioner as an urgent case for tracheotomy. She had been ill since the previous August, and was supposed to be suffering from phthisis. On taking the history it was found that she had been married nine years, had no children, but had had two miscarriages. The illness of August, 1893, commenced by what the patient called erysipelas of the head and face.

Examination of the Larynx revealed considerable swelling of the epiglottis ; the false vocal cords were greatly swollen, meeting in their anterior half completely, but leaving a small triangular chink behind through which the patient breathed. The colour was dusky red.

Examination of the Thorax revealed consolidation of the right apex posteriorly, and moist sounds throughout. The sputum was examined on three separate occasions for tubercle bacilli, but none were found. The patient suffered from a dry distressing cough, dyspnœa, dysphagia, heavy night sweats, and delirium.

Treatment.—Iodide of potassium and liq. hyd. perchloridi, vapor conii, and syrup of Tolu and codeia for the cough.

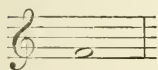
The PRESIDENT asked whether any further search had been made for bacilli.

MR. WILKIN said that since the third examination there had been no further search made.

DR. DUNDAS GRANT. *A Case of Diplophonia.*

Miss D., aged thirty, teacher, had suffered for over two years with hoarseness affecting the lower register. Above F of the first treble space, where the transition into the upper thin register took place, her voice was perfectly clear. On laryngoscopic examination, no abnormality was seen except visible loose vibration of the inner portion of the cords in the lower register, the approximation of the posterior third being imperfect. Dr. Grant looked upon the case as one of a nervous affection of the internal thyro-arytenoid muscle.

DR. WOLFENDEN : From the very slight examination one has been able to make of this very interesting case, there does not seem to be anything abnormal in the vocal cords. At the same time, I would suggest to Dr. Grant that, when he has time, he should make extra diligent search for any little nodes in the cords, because it strikes me that that voice is just the kind of voice that would be produced by a nodular



condition of the cords. They may be of a fibrous nature, or little cartilaginous nodes. I have seen those little cartilaginous nodes in the anterior portion of the cord. Whether these have been found in this case or not I do not know, but in my opinion it is either that or else some perverted glottis action in which the anterior two-thirds of the vocal cords only are brought into close approximation, leaving the posterior third of the glottis comparatively open. I noticed that the cords were more approximated in their anterior two-thirds than in their posterior third. I think that Dr. Grant will do well if at his leisure he will make a careful search for little fibrous nodules.

Mr. LENNOX BROWNE: This case rather confirms what is a common experience. You have here a spare woman, probably anæmic and much below par, teaching a class of thirty pupils and forcing her voice. Personally I believe that these vocal anomalies are more often, in fact almost always, dependent on some faucial or pharyngeal trouble. I notice that she has a very long uvula, and that it not only does not retreat on taking a note, but also that when she breathes down through her nostrils it does not much elongate; it is, in fact, paretic. The paresis in the larynx is as Dr. Wolfenden says, at the posterior part, and probably it may be that the arytenoid muscles are not acting properly, though, of course, there is inaction of some portion of the internal thyro-arytenoids also. The glottis takes very much the figure that one gets in those cases. For my part, I should feel inclined to take off that patient's uvula and send her to someone to educate her how to properly produce her voice, and I should expect to see her recover it.

Dr. WOLFENDEN: I differ from Mr. Lennox Browne when he says that this is a case of paralysis of the arytenoideus muscle. I have had a good many years' experience at the Throat Hospital, where one would expect to see many of these cases, but I do not remember ever having seen more than one isolated case of paralysis of the arytenoideus muscle.

I understand from Dr. Grant that this girl is a Board school teacher. I would like to enter a protest from this society against the enormous work that is thrown upon young and undeveloped females in teaching in these Board schools. My late colleague, Dr. Greville Macdonald, some time ago wrote a little pamphlet on "School Board Laryngitis." There is nothing particular in that sort of laryngitis, but there is a great deal in the fact that many of these Board school teachers break down. I have seen a great number of cases, and they have led me to think that the whole system is a scandal, and that some public body or society would do a very useful service if they gave their attention to this matter.

Dr. Wolfenden suggested that the subject of Board school teaching would be a very useful subject of discussion at some future meeting of the Association—a full meeting—so that any protest that is finally decided would come with much more weight.

Mr. LENNOX BROWNE: Some time ago, before the appearance of Dr. Macdonald's pamphlet, I had a collection of cases, and I wrote a letter to the late chairman of the School Board, whom I knew personally. His reply was very characteristic and rather cynical, it being to the

effect that so long as the supply met the demand he was afraid there was nothing to be done. And these poor girls say to us, "Pray don't say much about forcing my voice due to over large classes being the cause of my trouble, for it is so easy to find other teachers." This circumstance only makes the protest all the more necessary, and I should like to very heartily endorse Dr. Wolfenden's remarks.

Dr. MILLIGAN : I should like to very heartily endorse the remarks of Dr. Wolfenden and Mr. Lennox Browne, and I think that any protest coming from such a society as this would have great weight. I have been extremely shocked with the number of cases of teachers' nodes coming to the Throat Hospital at Manchester. I think I may say that hardly a week passes that I do not see patients possessing these anomalies, and very often I think they are maimed for life ; their voices are perhaps more or less recovered, but seldom entirely. I am quite sure there is far too much work thrown upon these teachers. They work in ill-ventilated rooms and the classes are often very large.

The subject has interested me very much for some time past. On two or three occasions I have complained to friends on the School Board at Manchester, and the complaint has always been met very readily ; indeed, they have I know in two or three instances actually modified the work of the teachers. However, I do think that a protest coming from a society such as this would be more valuable than the efforts of any one individual.

Dr. BARON : I wish to emphasize what has just been said. We are constantly seeing these poor girls. Their livelihood is threatened, they hardly know what to do ; leaving their work means practically to starve, and yet they are obliged to go on in this way. I think something might be done for them in the way of instruction in voice production. We all know that an hour's work badly done does more harm than several hours of the same kind of work if it is done well. Now I find these girls are entirely ignorant of how properly to produce the voice, and I have been sending them to a voice trainer in Bristol, who finds that they are ignorant of the first rudiments of voice production. I think if some means were adopted for instructing these girls, their throats would not go wrong so often as they do, and that all the more quickly because they are not taught how to use the instrument which Nature has provided them with, and on the health of which their livelihood depends.

Mr. BARK : I should like to support this protest. In Liverpool we have the same thing going on day after day, and week after week. These Board school teachers, especially young girls, come to the hospital on account of loss of voice, and I endorse the remarks of Dr. Baron that this is due to a great extent to faulty voice production, and that the cure for the evil is in a proper method of voice production being introduced as part of their training.

Mr. LENNOX BROWNE : One more word, that is this : I have no doubt no one would expect me to contradict the view that these effects are the result of wrong voice production, but I think also that nothing could be more detrimental to the voice than having to speak to a large class, very

often when there is a great deal of noise. I have even heard of one hundred pupils in a class, mostly young children, and, of course, in order to be heard, the teacher has to force her voice very much. I feel quite sure if Dr. Baron, Mr. Bark, and Dr. Milligan, and other Fellows living in the large provincial towns could manage to bring this matter under the notice of the local branch of the Tonic Sol-fa Association they would find a great willingness on their part to give instruction. The association is mainly composed of the middle and lower middle classes, the very class from which teachers are selected, but in no musical association is so much pains taken in the way of teaching good voice production. In the provincial towns there would be little difficulty in getting something done in the matter, in the direction I have indicated. In London, on account of its size, it might be more difficult.

Dr. DUNDAS GRANT'S reply: I have to thank you for having shown such great interest in my case, and to express my pleasure at the interesting course the discussion has taken. There can be no question about the necessity for some such steps as have been mentioned. I fancy that it is pretty well known that a great deal of the discomfort in the throat is caused, in the case of Board school teachers, by the dust from the chalk which they use so freely on the blackboard, and which they wipe off with a dry duster instead of a wet one. On all occasions, when the complaint has come under my notice, I have recommended the teacher to use either a wet sponge or wet duster, and my promise that that would effect a difference—I mean apart from other considerations—has frequently been fulfilled. Of course, the great question of the excess of supply over demand will open up, and the School Board may say, "What we want is greater discrimination in the selection of candidates," which I am sure would be very unpopular with one section of the community; and then they would say, "We want more money to pay for the teachers," which would be very unpopular with another section, the two interests pulling different ways. Such a protest as is proposed should be a very powerful one, and we should take great pains to have it thoroughly well backed up.

I shall certainly keep Dr. Wolfenden's remarks in mind, and report again if I find any indication of nodal points in the cords. With regard to Mr. Browne's suggestion concerning the uvula, I shall consider that with great respect, and if the result shows it to be correct, I shall be very happy to acknowledge it before the Association.

Mr. PERCY JAKINS. *A Case of Pulmonary Phthisis complicated with Epithelioma of the Pharynx in a woman thirty-three years of age.*

S. H., aged thirty-three, infant schoolmistress, unmarried. Patient was sent to the Central London Throat Hospital by Lord Montague on November 9th, 1894.

Family history: She was one of fourteen children; thirteen are still living, all healthy. Father died of "fits" at the age of sixty-two; he suffered for some time with what the patient described as "tumour in the throat." Mother died of diabetes, aged seventy.

Previous history: She had enjoyed fairly good health all her life till

four months ago, since which time she has complained of an occasional cough and weakness of voice. For seven years past there have been periodical attacks of slight difficulty in swallowing, which has been gradually getting worse ; no specific history. Her last attack of illness dated five weeks before admission, and this was characterized by increasing difficulty in swallowing, accompanied by pain and marked alteration of voice. From this time she rapidly lost flesh and strength.

Present condition : On admission she weighed six stone eight pounds, and was thin and emaciated. She referred all her troubles to her throat ; cough troublesome ; expectoration, muco-pus, tinged with blood and very offensive ; there was pain on deglutition, but not severe ; she was extremely weak, and said she had not slept for fourteen days, and had to be propped up in bed, being unable to retain the recumbent position.

On examination : Pulse 120, small, irregular ; temperature 99·5. There was evidence of consolidation of the whole of the upper portion of the right lung. The left lung appeared to be healthy.

Throat.—In the pharynx was a large cauliflower growth which extended to, but not beyond, the posterior pillars of the fauces, which were free ; the growth extended downwards. The root of the tongue, although swollen, was free. The arytenoids were œdematous, more especially the left ; the vocal cords could not be seen owing to the amount of secretion, but after treatment this was much reduced, and the left cord was found ulcerated. As there was some room for doubt, my colleagues, Mr. Lennox Browne and Dr. Dundas Grant, at my request kindly saw the case with me, and advised removal of a small portion for microscopical examination ; when this was done, the growth was found to present all the characters of epithelioma.

The treatment adopted before the patient was seen by my colleagues was based on the assumption of a syphilitic cause, and liq. hydr. perchl. and pot. iodid. were given in large doses, together with troch. antim. co. (which is "Plummer's" pill put up in a lozenge). Antiseptic sprays were also used for some time. Owing probably to the cleansing process there was a distinct improvement, she slept better and was more comfortable than she had been for weeks, but this did not last ; she gradually sank, by November 27th only weighed five stone eleven pounds, and died on December 13th.

Post-mortem examination revealed the fact that the diagnosis was correct ; the left lung was fairly healthy, the right was riddled with tubercle. The growth was found to extend into the œsophagus, causing a stricture, as may be seen in the specimen exhibited. This case is of considerable importance, showing how a tuberculous deposit may take on malignant growth. The sputum was examined and tubercle bacilli were found. For these notes I am greatly indebted to Dr. Frederick Spicer.

Dr. PEGLER, who read the paper, called the attention of the Fellows to the sections of the growth he had made for Mr. Jakins and exhibited under the microscopes. They were remarkable for the number and extent of the epithelial columns pervading the tissue. No giant cell systems had been discovered.

Dr. WOLFENDEN : It may be within the recollection of the society that I recorded a case, the details of which are to be found in the "Transactions." It was a case of early syphilis, which eventually developed tubercle, and ended with epithelioma and death. In the microscopical specimen there was distinct histological evidence of syphilis in the cells and tuberculosis. In one section which I showed here there was a tubercle with tubercle bacilli underneath an epitheliomatous tissue in the upper portion of the section. It was definitely proved histologically as well as clinically.

The PRESIDENT (Dr. WHISTLER) showed a case of *Bilateral Paralysis of Abduction of the Vocal Cords*.

The patient, a man aged twenty-eight, had applied to him at the London Throat Hospital in July, 1894, with hoarseness, pain, and cough, of several weeks' standing. He was wearing a tracheal canula, and stated that tracheotomy had been performed upon him twelve years previously. All that could be elicited in regard to the early history of the case was that for five years prior to the tracheotomy he had suffered from throat trouble with increasing difficulty of breathing. He made a very good recovery after the operation, but he had never been able to dispense with the tracheotomy tube. The laryngoscope showed very defective abduction of the vocal cords. On deep inspiration they barely reached the cadaveric position. There was no deficiency of adduction. The vocal cords were red and swollen. The acute congestion was specially marked over the left cord, with redness and swelling over the inter-arytenoid fold. There was no ulceration, or cicatrix in the pharynx or larynx—nothing pointing to any active specific disease ; no evidence of ankylosis of the crico-arytenoid articulations. There was no cervical tumour, or any sign of intra-thoracic disease. Pressure upon the recurrent laryngeal nerves as a cause might, therefore, be excluded. The long course of the affection, the absence of any ataxic symptoms, and, on the contrary, the excellent general health of the patient did not point to any central disease as the origin of the paralysis.

The later acute laryngeal symptoms were evidently due to an intercurrent inflammation. There was no syphilitic history ; and the laryngeal signs, though such as might frequently be found in connection with syphilis, were not specially pathognomonic of this disease. All that could be said in support of the possible syphilitic nature of the affection was that under the administration of iodide of potassium the laryngeal inflammation very quickly passed off.

The laryngoscopic image at present showed no signs of inflammation. The abductor paralysis remained as before.

Dr. WHISTLER thought that the parietic condition was the result of the long-continued respiration through the tracheotomy tube. He had obtained some benefit by plugging the orifice of the tracheal canula, and this treatment, originally suggested by Dr. Gerhardt as a method of dilatation, was being carried out. He presented the case in the hope of obtaining an expression of opinion from the Fellows. However, as the hour was so late, and there was an important paper still before the meeting, he would

not encroach upon the time of the Association, but would bring the patient forward on a future occasion to report progress, and for discussion.

Mr. LENNOX BROWNE. *The Micro-Organisms of Diphtheria.*

The author gave a brief demonstration, illustrated by lantern slides, of micro-photographs of the recognized varieties of the Klebs-Loeffler bacillus, both single and in association with various micro-organisms, especially with strepto-, staphylo-, and diplococci.

The exhibition comprised a series of eighteen examples, all of which had come under the personal observation of the speaker. Short clinical notes were given of each of the cases from which the micro-photographs had been prepared, so as to emphasize their respective and relative diagnostic and prognostic significance.

PARIS SOCIETY OF LARYNGOLOGY, OTOTOLOGY, AND RHINOLOGY.

January 5th, 1894.

GELLÉ. *Instrument for clearing away the Outer Wall and opening the Attic.*

The external auditory meatus affords sufficient drainage for pus from the tympanic cavity. When there are lesions of the posterior wall separating the tympanum from the mastoid antrum and cells, whence arise internal mastoid fistulae, or there is caries of the supra-tympanic parts of the walls of the attic, and when they are limited to the external wall, these lesions may be surgically treated, the osseous lamella being removed easily. The only difficult point is to recognize that the osseous affection is quite limited, and that no other carious spots exist on the tegmen tympani, or on the petrous tegmen especially. Removing the outer wall of the attic to expose that attic is bold, but without great danger if the lesion is quite limited. The wall is easy to explore and operate upon in view of its isolation from other parts. The author proposes, so as to avoid risk of fracturing the tegmen tympani in opening the attic, to clear away the wall by means of a special cutting forceps, a hollow tube with two curved hooks, which catch and fix the osseous lamina, while a steel cutter is pushed forwards against it. The bone is thereby crushed and held in the crotchets, thus avoiding the dangers of an operation which is very useful to open the attic in cases of limited caries or of otorrhœa.

GELLÉ. *On Liberation of the Stapes.*

The author's remarks were limited to fixation of the stapes, consecutive to auricular scleroses. Under the thickened parts it should be remembered that there is a bonelet capable of being exposed and set at liberty. In certain deaf patients we find a depressed, sunk tympanum, adherent in its postero-superior quadrant, modelling the projection of the stapes and the descending branch of the incus, so that it gives the impression of a perforation. Perhaps there is a perforation, the pellucid tissue of the membrane always allowing the ossicles to be seen; the air douche giving immediate amelioration of hearing. The separation of the septum thus freeing the stapes often increases this in a remarkable manner,

There has been a production of granulations, then sclerotic contraction, and fixation of the stapes. At other times the fixation is sclerotic, dry, and not thick; the fixation is then more solid. The author confined himself to the two former classes, and cited cases in which he made incisions over the mobile ossicle, and touched the parts with chromic acid fused on a probe. The incisions should reach the bone, and this produces heroic effects when done at the beginning of the disease. Chromic acid (fused on a probe) is a wonderful modifier of these osteo-periostites when a perforation sufficiently large renders access to the labyrinthine wall possible.

Dr. CHATELLIER believed that Dr. Gellé had intervened during the acute period of a chronic otitis, when the elements were still in a mobile condition and in a stage of evolution, the incisions acting like depletory punctures.

COURTADE. *Universal Handle for Instruments, with Variable Angle.*

The ordinary Politzer handle has a fixed angle. The author has constructed a handle in which the socket containing the instrument remains movable, and can turn through an angle of 90°, at any point of which it can be fixed.

COURTADE. *Hermetic Covering (Manchon) for Sieglé's Speculum.*

The ordinary speculum cannot be pressed strongly against the walls of the auditory passages, and, in spite of its caoutchouc tube, it is very painful when the meatus is very sensitive. The author has devised a covering of caoutchouc which can be inflated by a small ball. The interval between the walls of the speculum and the auditory passage is filled by an air-bag, assuring hermeticism, whatever the form of the meatus or the section of the speculum.

COURTADE. *Hook for Pressure and Spring-Traction.*

The probe, elbowed at its extremity, is maintained in position of rest by two small springs acting in opposite directions; when pushed or drawn away one always acts. A tampon on the end of the probe can be used with great delicacy, and traction is gentle, gradual, and progressive.

COURTADE. *Case of Recurrent Subglottic Pseudo-Membranous Laryngitis.*

The patient, aged twenty-five, for eight days had persistent dyspnœa, with suffocative crises after meals and at night. In April, 1892, she had sore throat, and two or three days afterwards suffocative attacks, which lasted fifteen days and then disappeared. For two months she was well, then was attacked again. The sixth attack was the longest and most serious. Laryngoscopic examination was difficult, and revealed under the vocal cords a uniform white-grey plaque. The movements of the glottis were easy and free, and the permanent dyspnœa was, therefore, not due to obstruction, but to spasm due to the pseudo-membranes. Antispasmodic remedies relieved it, and coughing expelled four greyish flakes the size of the little finger nail and the thickness of a ten centime piece. The voice then became normal again, having been previously aphonic. Laryngoscopic examination was conducted forty-eight hours after without spasm. The mucous membrane over the arytenoids and ventricular bands was reddened, the cords were rosy, the subglottic region where the false membranes had been located was deep red, but without trace of exudation.

The case was interesting from the recurrence of dyspnœic attacks without appreciable cause, the last being of sufficient gravity to suggest tracheotomy, and, by the limitation of the production of false membranes to the subglottic region, determining violent attacks of suffocation of spasmodic nature.

February 5th, 1894.

BONNIER. *Auricular Reflexes.*

I. INTRINSIC REFLEXES.

A. *Reflexes of Compensation.*

The membranous parts of the ear (tympanic, labyrinthine fenestræ, the membranes separating the endo-lymph from the peri-lymph) can only be normal in function when they are supported on both sides by pressures causing equilibrium at rest. Any disturbance of this entails diminution of oscillation, *i.e.*, of transmission.

(a) *Labyrinthine overflows.*—In slight variations of pressure the labyrinth utilizes certain passive channels of escapement towards the endo-cranial spaces, which permits the internal ear not to vary in capacity. When the limit is attained the fenestra rotunda yields, and the inertia of the labyrinthine liquids is embarrassed by the comparative rigidity of the too tense membrane. There is an obstacle to oscillation and diminution of audition. When escape is impossible other active compensation occurs.

(b) *Vaso-motor compensation.*—The reflex vaso-motor regulation of the labyrinthine tension is effected through the descending root and central inferior nucleus of Ritter, Deiter's nucleus, and the saccular nerve.

(c) *Tympanic compensation.*—When the exaggerated tension of the tympanum forms an obstacle to the function of the labyrinth, tympanic compensation follows, slightly drawing outwards the stapes, and increasing the labyrinthine capacity a little. When excess of intra-labyrinthine pressure is due to excessive secretion and expansion, stasis, hæmorrhage, vaso-motor paralysis, the centrifugal movement of the stapes is purely passive, and is effected if the tensor of the tympanum or rigidity of the membrane does not oppose it. When the pressure of tympanic contents is less than that of atmospheric pressure, equilibrium is only obtained by proportional diminution of the tympanic capacity. Retraction of the membrane pushes the stapes into the labyrinth, drives the liquid into the endo-cranial channels of escape, and the secondary tympanum projects into the tympanic cavity; the *reflex of stapedian curb* then intervenes, permitting the fenestra rotunda to remain flat and oscillate. This is done through certain fibres of the nerve of Wrisberg and of the stapodial nerve.

(d) *Tubo-tympanic compensation.*—Equilibration of the air-pressure in the tympanum is brought about by the suction exercised by the elastic return of the tympanic membrane as soon as free entrance of air is permitted by the opening of the Eustachian tube during swallowing. This is effected by the *tensores palati* muscles, supplied (like the tensor tympani) by the fifth nerve and (like that muscle) developed from the maxillary arch. The opponent, the levator palati, is (like the stapedius) supplied by the facial nerve, and (again like the stapedius) developed from the hyoid arch. The centripetal nerves for this reflex are the glosso-pharyngeal and the saccular, the centrifugal, the trigeminal and the facial. The centres are uncertain.

B. *Reflexes of Accommodation.*

(a) *Accommodation for incidence.*—The ossicles of the tympanum undergo a lateral movement simultaneous with the in-and-out one induced by atmospheric oscillations in the meatus. The papilla of the saccule is stimulated at different poles according to the variations in this particular movement on the part of the stapes. There is thus a means of appreciating differences in the direction of

incidence of sound-waves over and above that afforded by binaural hearing. The centre for this form of reflex accommodation, carried out by the muscles of the neck, lies in the cerebellum.

(b) *Accommodation for intensity*.—The mechanism consists in the variation in the tension of the membrane, effected by contraction or relaxation of the tensor tympani, its action on the stapes being moderated by the stapedius. The centripetal nerves are the cochlear and saccular fibres of the auditory, which terminate in the nucleus of origin of the nerve of Wrisberg, either in the vestibular trunk or in the anterior nucleus. From this we may trace motor fibres through the facial and the lesser superficial petrosal to the stapedius and tensor tympani.

(c) *Accommodation for Pitch*.—Increase or diminution of tension of the membrane simply renders it more or less incapable of vibrating at all, not of vibrating more or less readily to sounds of different pitch.

C. *Binaural interceptive Reflex.*

Compression of the air in one meatus causes a diminution of the perception for the sound of a vibrating tuning-fork held opposite the other one (Gellé). This is an "interception" rather than an accommodation. It is evidence, in the first place, of the preservation of the symmetrical action of the "curb" muscles of the tympana, particularly or even exclusively the stapedii. The starting-point of the reflex is the neuro-epithelium of the "fundus" of the ear. Its absence in disease is considered by Gellé to indicate suspension of the function of the reflex centre, but may it not equally well be explained by a change in the conductivity of the vestibular nerve? The vestibular nerve affords the centripetal element, the nerve of Wrisberg the centrifugal. The anterior nucleus joins the superior olive of its own and of the opposite side as well, and fibres in the trapezoid body also unite the two anterior nuclei. The symmetrical action is thus most easily explained.

II. EXTRINSIC AURICULAR REFLEXES.

1. *Auricular Nerve*.—From the close association of this nerve with the phrenic is derived the explanation of the hiccough, clucking or eructation sometimes occasioned by irritation of the posterior wall of the external meatus.

2. *Pneumogastric Branch*.—Irritation of this branch causes the auricular cough.

3. *Auriculo-Temporal*.—Through this nerve diplopia, and even optic atrophy, have been traced to disease of the ear. In a case of herpes of the eye and of the tympanum the central affection was probably located in the Gasserian ganglion.

4. *Glosso-Pharyngeal*.—Irritation through this may produce nausea and retching.

5. *Chorda-Tympani*.—Implication of this nerve may cause repeated swallowing of saliva, or burning or tickling feelings on the corresponding side of the tongue.

6. *Utricular Nerve*.—This nerve enables the animal to judge of the position of the head, the direct sensorial source of equilibration, and communicates with the cerebellum (vermis superior), from whence pass, by the spinal bundles of the middle peduncle, the fibres which communicate centrifugal impulses to the fundamental fasciculus of the antero-lateral columns. There are numerous commissural connections. Most of those fibres of the utricular nerve which do not go to the cerebellum terminate in the internal or vestibular nucleus, the bulbar centre for "subjective direct cephalic orientation," the starting-point of all the reflexes associated with vertigo. From this nucleus fibres run to the superior olive, which in its turn, gives off an important bundle to the nucleus of the external oculo-motor (sixth nerve). Hence the oculo-motor reflexes observed in

ear disease, with or without vertigo, such as strabismus, diplopia, pupillary contraction, nystagmus, and disturbances of accommodation. Inversely violent excitation of the retina has been known to produce deafness.

7. *Saccular Nerve*.—Modifications of pressure are perceived by means of this nerve. It may therefore influence the respiratory and cardiac rhythm. Through it may be brought about the palpitations, feelings of oppression, epigastric pains, vomiting, and epileptiform or hysteriform attacks which accompany labyrinthine commotion.

8. *Cochlear Nerve*.—Epileptic attacks have been known to be excited by musical sounds, and startings are similarly produced by sudden noises.

It will thus be seen how many reflex disturbances may arise from affections of the ear. Local treatment of a simple kind is often all that is required in order to allay them.

CARTAZ. *Two Cases of Chronic Abscess of the Tonsil.*

The first case was that of a man aged fifty, who, after an acute tonsillitis, had recurring abscess twelve times in four months. Through a fistula in the upper part of the faucial pillar some drops of pus escaped every five days. Vertical incision led to escape of considerable pus. This was followed by washing out with two per cent. chloride of zinc. Fifteen days later, recurrence. This time a drainage tube was inserted between the anterior pillar and tonsil, and carbolic and chloral douches were given three times a day. On the third day the tube was replaced by a catgut loop; the abscess cavity then emptied, and was cured.

The second case was that of a man aged twenty-four, who had acute tonsillitis; opening of the abscess gave relief to acute pain, but constant discomfort in swallowing. The abscess had recurred three times. The author found a piece of chicken bone imbedded in a lacuna about the centre of the tonsil. This was withdrawn. Its encystment in the tonsil probably caused the suppuration.

CHATELLIER could recall only two such cases. He thought they were glanular, retention cysts.

RUault had seen a dozen cases. But they must be carefully sought after. If pressure on the anterior pillar, successively from below upwards and *vice versa*, is made with the back of a probe, a drop of fetid green pus can be seen at the orifice of a fistulous tract. Cartaz's cases are chronic peritonsillar abscesses consecutive to an acute tonsillitis. These abscesses are best treated, not across the faucial pillar, but between it and the tonsil, with simple or cutting crotchet to destroy adhesions, and removing a piece of the gland with a punch so as to expose the abscess. Applications of strong iodized iodine for several days cure many cases. He had seen five cases in women of from twenty to thirty-five, where the fistula opened in the thickness of the arch of the palate, and this variety of chronic abscess of the palate has not, to his knowledge, been described before.

SAINT-HILAIRE had seen a great number of tonsillar fistulas. There is no tonsillar hypertrophy without one or more fistulous tracks. The fistulas seated in the tonsil are easily cured by extirpation of the gland, but those seated in the peritonsillar tissue are not so simple. Some are so deep that it is impossible to open completely with the bistoury.

JOUSLAIN. *Galvano-Cautery Points for the Naso-Pharynx.*

These are designed for hypertrophies, adenoid vegetations, polypi, &c., which patients will not submit to have curetted. The cauteries are fourteen centimètres long and curved at a right angle, altered at will. One is one centimètre in diameter, the other five millimètres (the most useful).

COLIN. 1. *Pharyngeal Mycosis Leptothricia.*

This occurs in three forms—(1) small isolated spots; (2) larger spots like a cock'scomb, or better still, those tufts of fungi called "barbe de Capucin"; (3) small smooth, yellow-white plaques. The affection is only situated in the region of adenoid tissue.

Histologically this leptothrix often arises from a flattened epithelial cell, which is generally granular, transparent, and necrosed. Above the parts invaded by the leptothrix is always a considerable thickening of epithelium. The etiology is not known. It attacks both sexes and all professions between twenty and thirty years of age. Symptoms are very slight, viz., tickling and dryness, or *nil*. The diagnosis is only difficult from lacunar tonsillitis. The white spots are not situated only in the crypts, but on the mucous surface, to which they adhere strongly, and they are nearly always found over the base of the tongue and the pharyngeal wall.

Avulsion of the leptothrix, and strong frictions of iodized iodine, alone or associated with chloride of zinc, is the best treatment. Tobacco smoking seems to be curative.

2. *Phlegmonous Lingual Peri-Amygdalitis.*

The case was mentioned at this Society in July, 1893. Siefert has just published a memoir in Fraenkel's Archives, ignoring the memoirs of Ruault, Cartaz, Luc, and the cases he cites are basic deep glossitis, pre-laryngeal phlegmons, and not at all superficial submucous abscess of the base of the tongue. The patient seen by Ruault in 1891, with rigors, high fever, violent pain in the throat, delirium, dyspnoea, and dysphagia, ending in seven days with evacuation of pus, was seen again by the author in 1893, and, after the subsidence of an acute attack, it was possible to examine the base of the tongue, when a red mammillated tumour was observed, with many orifices giving exit to pus. Incisions with Heryng's knife, and iodized iodine applications cured the condition. An abscess of the other side, following, was similarly cured.

March 5th, 1894.

LICHTWITZ and SABRAZES. *Cholesteatoma of the Ear.*

This condition has been found by Virchow in a third of all the fatal cases of disease of the ear. The authors are in favour of that view of its etiology which explains its occurrence by an ingrowth of the meatal epidermis through a tympanic perforation, with continued desquamation due to persistence of the inflammatory condition. This takes place most readily through perforations in Shrapnell's membrane. "Artificial" cholesteatoma may follow surgical opening of the mastoid, just as it may occur after spontaneous opening.

A case is narrated of a cholesteatoma of the size of a hazel nut, extracted from the postero-superior wall of the osseous meatus, the remaining aperture opening into the antrum. On teasing out the tissue in picro-carminé it was found to consist of layers of horny epithelial cells without nuclei, and of numerous crystals of cholesterine. On section the layers were seen to be separate and continuous. In the deepest part the zones were sinuous, and took on a pinkish-yellow stain. There were numbers of punctiform granules, mostly fatty, but some staining like proteid bodies.

Cholesteatomata not preceded by inflammation may occur, but these are exceedingly rare, and in most of the supposed cases it is difficult to exclude the possibility of a past suppuration.

The symptoms are various—pain, discharge, deafness, facial paralysis, etc.—but the diagnosis depends on the appearance of the masses under direct inspection or their extrusion by syringing.

The prognosis is serious and only favourable when the mass is sufficiently accessible for its removal. It is apt to lead to meningitis, cerebral abscess, sinus phlebitis and erosion of the tegmen.

When diagnosed the only treatment is removal. This may sometimes be accomplished by means of intra-tympanic syringing after the removal of granulations, carious bone, or the remains of the tympanic membrane. It may be necessary to detach the auricle and remove the outer wall of the attic and the postero-superior wall of the osseous meatus. If the tumour lies in the antrum, and the communication is only by small fistulous openings, Schwartze's or Stacke's operation for laying open the antrum may be called for.

To prevent recurrence the opening must be kept freely open.

CARTAZ. *Malformation of the Ear.*

The concha was reduced to a cartilaginous cushion, with a prolongation replacing the lobule. There was no trace of a meatus.

April 6th, 1894.

Dr. BONNIER. *Auditory Localization.*

The recognition of the direction of sounds may be reduced to three operations—bin-auricular localization, localization of the auditory field, localization of the particular part of the auditory field. Bin-auricular localization is effected to a considerable extent by the movements of the head necessary to attain the maximum of audibility. The uni-auricular depends on the obliquity of the movements impressed upon the tympanic structures. The varying obliquity of the impulsions of the stapes involves the pressure affecting different spots on the sacculle, and also different directions of undulation of the liquid in the utricle and canals. Judgments are, therefore, formed according to which of the canals is most stimulated.

MÉNIÈRE. *Case of Ossifying Sarcoma of the Middle Ear in a Child eight years of age.*

Five years previously there had been an otorrhœa with perforation, which lasted a year. One year before observation, a slight discharge, lasting a few days, came on after influenza. When observed by Dr. Ménière, there was a "ball of flesh" projecting from the meatus. The probe caused considerable bleeding. A piece was removed with the cold snare, and found on microscopical examination to consist of embryonic cells. A month later there was increased growth. Another portion was removed. A few days later there was general paralysis. The tumour was removed after detachment of the auricle, and was found to be a well-marked, ossifying, spindle-celled sarcoma. Recurrence took place, and led to a fatal termination.

May 4th, 1894.

HERMET. *Eczema of the External Meatus.*

The causes vary in different subjects—thus eating shrimps, sea baths, medicated ear-drops of boric acid, salol, carbolic acid, etc.; flow of pus from the tympanum (causing periostitic otitis), exposure to cold (affecting first the auricle), and continued use of cod liver oil has been noted. External otitis and furuncle always

arise from eczematous conditions. There are two classes of auricular eczema, the dry and the moist, leaving the insignificant chronic form out of account. Furuncles may occur as a complication just as the desquamative stage is about to commence. In the treatment a ten per cent. solution of nitrate of silver is applied on a pledget of wool, left in position for twenty-four hours, the meatus having previously been thoroughly washed out with warm water. The same treatment is recommended for furuncle. It can be repeated as often as required.

Dr. LUBET-BARON pointed out that seborrhœic eczema of the ear often proceeded from seborrhœa of the scalp.

MOURA. "*Humage*"—"Humeurs"—(*Inhalations*).

This is the aspiration of gases, vapours, essences, pulverized waters and their absorption by the mucous membranes of the respiratory passages, as practised on a large scale at thermal resorts. The author gives a description of simple apparatus devised by M. Menelon, in which he has introduced some modifications in the expiratory mouth-piece, and he further recommends the sulphur springs of Ax-Ariège as superior to those of Luchon, in being seven to eight degrees higher in temperature, and producing more vapour and more of the sulphurous principle. These inhalations are most beneficial in chronic diseases of the respiratory passages.

JOUSLAIN. *Hematoma of the Nasal Septum produced by a Rare Traumatism. Deafness and Blindness produced on the Right Side in the Case of the Barber Maurie consecutive to a Revolver Shot received in the Chest from the Anarchist Henry.*

The first case was that of a child of twelve, whose nose had been forcibly twisted between the thumb and finger of a companion. Two red tumours filling the fossæ were situated on the septum, from which twenty-five to thirty grammes of pus were evacuated on aspiration. In spite of antiseptic washes the tumour only slightly diminished, the cartilaginous septum sloughed, and suppuration followed. Three months were necessary for cure. The interest of the case lies in the unusual cause of the traumatism.

In the second case the shot produced only a contusion, a loss of consciousness, a fall on the face, and hæmoptysis. On the eighteenth day the patient perceived that he could not see with the right eye or hear with the right ear. There was a neurasthenic condition, but no lesion of the ear. The function of the apparatus of transmission is normal (positive centripetal pressure) and bin-auricular reflex is preserved. Air douches, massage of the tympanum, and static baths have been without effect. Examination of the eye by Dr. Gillet revealed old lesions antedating the present attack, and tearing of the vitreous cells, and inflammation producing floating bodies, and the author attributes the symptoms only to shock, resembling "railway spine."

Dr. GELLÉ corroborated this opinion after a full examination.

June 1st, 1894.

MÉNIÈRE. *Case of Foreign Body in the External Meatus.*

The sponge of an aurilave broke off in the meatus, and great irritation, amounting to abscess formation, followed attempts made to remove by means of a hair-pin, forceps, etc. After opening the abscess and applying antiseptic dressings for a few days, Dr. Ménière removed the sponge by means of a small hook.

COURTADE. *Sliding Indicator for the Eustachian Catheter.*

The slide is fixed at such a distance that it just touches the tip of the nose when the point of the catheter is in the tube, so as to facilitate its subsequent introduction.

MENDEL. *Tertiary Syphilitic Rhinitis ; Retention of a voluminous Sequestrum for four and a half years.*

There was foetid rhinitis, with green foetid crusts, and the patient felt something movable in the nose. A large sequestrum of irregular shape was visible in each choana. It was cut in two by the galvano-cautery loop, and then extracted. It was a portion of detached septum.

JOUSLAIN. *An Electric Tuning-Fork.*

This instrument, constructed by Gaiffe, of Paris, is useful for carrying out Gellé's tests. It can be employed also for effecting mechanical vibration after the manner of Charcot's helmet.

July 6th, 1894.

BONNIER. *The Morphogenic Homology of the Internal Ear.*

The internal ear is morphologically a sensorial organ of the lateral line. The three strips—the medullary, the lateral, and, between them, the intermediate—are described. The medullary one sinks into a groove, which becomes a canal, and forms the cerebro-spinal axis ; the lateral one forms in the cephalic region a series of ganglia—olfactory, ciliary, trigeminal, facial, auricular, glosso-pharyngeal and vagus—and in the caudal portion the “lateral line.” The intermediate forms the nervous connections between the medullary and lateral. The homologies and functions are tabulated as follows :—

DORSAL PLATE.		
<i>Medullary Strip.</i>	<i>Intermediate Strip.</i>	<i>Lateral Strip.</i>
Medullary groove.	Auricular neural ganglion.	Auricular lateral ganglion.
„ tube.	—	Otocystic vesicle.
Ventricular cavity.	—	Endo-lymphatic cavity.
„ fluid.	—	Endo-lymph.
Ependyma.	—	Non-papillary epithelium.
Branched nerve-cell.	Bipolar cell.	—
Neuroglia and sheaths.	Neuroglia and sheaths.	Papillary epithelium.
COVERINGS.		
Hyaline layer.	Lamellar sheaths.	Hyaline layer.
Pia-mater.	Peri-fascicular sheaths.	Pigmented vascular tunic.
Sub-arachnoid spaces.	Lymphatic sheath.	Peri-lymphatic spaces.
Arachnoid.	Arachnoid.	—
Cerebro-spinal fluid.	Cerebro-spinal fluid.	Peri-lymph.
Dura-mater.	Dura-mater.	Periosteum.
Cranial wall.	Petrous bone.	Labyrinthine capsule.
<i>Lateral Organs.</i>		<i>Labyrinth.</i>
Direct subjective localization.	Direct subjective localization (utricle and canals).	
Perception of variations of pressure, concussions.	Baro-æsthetic, mano-æsthetic, seis-æsthetic functions (sacculæ).	
	Addition (cochlea).	

BONNIER. *Vestibular Cortical Centres—The Ascending Parietal Convolution.*

In the case of a youth, who was left-handed, and had lost from infancy the hearing of the left ear from apparent destruction of the labyrinth, the left temporal cerebral convolution was found *post-mortem* to be much more developed than the

right one. On the other hand, the ascending frontal was much larger on the right side, but the ascending parietal almost atrophied, whereas the left ascending parietal was almost double in size in its lower half.

To the ascending parietal convolution may be attributed the activity of the vestibular functions of subjective orientation so directly indispensable to locomotion and equilibration. It may be considered—at all events, in its lower two-thirds—as the centre for vestibular perceptions, furnishing the mental images of attitude indispensable to motor ideation. The feeling of attitude is dependent on the activity of the vestibular nerve and its central connections.

COLIN. *Presentation of an Instrument.*

Ordinary knives for adenoid vegetations cut only with use of considerable force, or glide over the surface of the growth. The author's new instrument has two curved branches, with a posterior curvature with inner cutting edge, and an ovoid space with the narrowest part above. It is a double guillotine, and has a larger handle than the ordinary knives. There is no need to make pressure with it, and there is less pain produced. It reaches all parts of the naso-pharynx.

Norris Wolfenden.

Dundas Grant.

SIXTY-SIXTH CONGRESS OF GERMAN NATURALISTS AND PHYSICIANS, VIENNA.

SECTION OF OTOTOLOGY—*continued.*

(*"Monatsschrift für Ohrenheilkunde."*)

The conjoint sitting of the Sections of Medicine, Surgery, Psychiatric and Neurology, Otology, Laryngology and Rhinology, on the afternoon of Sept. 25th.

Dr. PAUL SCHUBERT (Nuremburg). *On Cases of Severe Complications of Otitis.*

I. *Cerebral Abscess.*¹—A workman, Heinrich W., aged forty, came under treatment on the 20th November, 1893, with acute otitis media on the right side. According to his own account he had previously suffered with deafness of slight degree in both ears, but never with earache or discharge. Fourteen days previously, in the course of an attack of influenza, he had become affected with severe pains in the right ear. He remained under the treatment of his private medical attendant, and discharge from the ear came on the day before he presented himself. On consultation with his doctor it transpired that shortly before he had performed a paracentesis.

On his admission, under the care of the writer, there was still pain in the ear, and slight tenderness of the mastoid process, which was quite normal in appearance. The perforation was small, and the secretion very moderate. As the pains did not yield to antiphlogistic treatment,

¹ A paper read before the Congress of Naturalists at Vienna.

three days later a second and more extensive paracentesis was performed, after which there was free outflow of pus, and disappearance of the tenderness on the mastoid. The spontaneous pain, however, still remained, even when after a rapid diminution of the otitis the perforation closed unusually quickly, and the swelling of the membrane went down. The pains radiated towards the temples, and returned with varying but, on the whole, undiminished severity every day, in spite of anti-neuralgic remedies. Although the hearing power had improved, and the drum showed only slight diffuse injection and no bulging, still the lasting pain pointed to retention of pus, and therefore, in the first week of December, a paracentesis was performed for the third time. The tympanum was perfectly clear, but the attacks of pain continued as severely as ever.

On the 7th December a slight paresis of the right abducens was observed, and next day it had increased to a complete paralysis. It was then difficult to determine whether the paralysis depended upon an intracerebral complication of otitis, as the tympanic inflammation had disappeared, the membrane had lost its redness, the drum contained no secretion, the hearing power was comparatively good, the mastoid process free from swelling or tenderness, and the fundus oculi normal. A diagnosis could not be made alone on the strength of the right-sided headache and the paralysis of the sixth nerve with sufficient certainty to justify further operative interference. The patient remained for a few days under out-patient treatment, and he was first seen again ten or twelve days later at his own dwelling. He lay in a deep comatose condition, and replied very shortly and unintelligibly even to vigorous shouting. The pupils were equal, strongly contracted, and without reaction. The corneal reflex was preserved. The pulse varied between 56 and 60. His breathing was snoring but regular. His wife stated that during the last few nights he had wandered and had continuously complained of severe headache. He had had frequent chills, but no vomiting. On pressure and percussion in the neighbourhood of the right ear, the mastoid and the tragus were free from tenderness, but in one spot, a few centimètres above the attachment of the concha, percussion caused the countenance to give signs of pain. The drum membrane on the affected side was perfectly pale, the paracentesis aperture had healed, and in the meatus there was no swelling and no bulging of the superior wall.

During the next few days the picture altered only in this respect, that there was occasional acceleration of the pulse from 94 to 120, and on one or two occasions the Cheyne-Stokes' type of respiration showed itself. There were occasional short intervals of awakening of consciousness. There was absolute loss of appetite and involuntary passage of urine. There could be made out slight paralysis of sensibility and of movement of the left upper extremity, at all events of the hand, while the right arm and both legs reacted to pin pricks; the left arm and hand remained motionless, the hand being generally in a position of slight flexion. The facial and trigeminal nerves acted normally. After counteraction of the myosis by means of

atropin it could be made out that the fundus of the eye was perfectly normal. The maximum temperature in the anus was 37·7.

On the 26th December consciousness again returned, and on the 27th the sensorium was perfectly clear, food was taken, and urine passed spontaneously. The pupils, moderately wide, acted well, and were equal on the two sides. The field of vision was complete for movements of the fingers, and hemiopia could with every certainty be excluded. The abducent paralysis on the right side still continued; the left arm could scarcely be moved, but the hand pressure still was very weak, and pin pricks could be felt on the left hand, but less distinctly than on the right. The headache was slight. There remained great tenderness to pressure over the ear. Pulse 100. The urine showed traces of albumen and a few tube casts, along with a quantity of urates. During the next few days sopor alternated with semi-consciousness, tranquil sleep with lively delirium. Speech was at all times defective and lisping, but not aphasic. The paralytic manifestations, and the localized temporal pain persisted unchanged; the pulse was between 96 and 100; the temperature in anus still 37·7. Under these circumstances the diagnosis of an abscess of the brain had considerable certainty. The hemiplegia of the opposite and the abducent paralysis of the same side pointed distinctly to the collection of pus in the right hemisphere, and negatived the idea of the sopor being due to uræmia, in spite of the presence of the nephritis. Cerebral hæmorrhage, embolism, and localized softening could be excluded by the severe pains, and in part also by the symptoms of cerebral pressure.

The most serious question was the possibility of there being a tumour. The localized pain, especially the tenderness limited so exactly to a point close above the attachment of the auricle, spoke against tumour, which is exceptional under such circumstances, while it was the rule in cases of abscess of the brain. Similarly with regard to the absence of choking of the optic disc, which is seldom absent in tumours of any duration when they reach such a stage as to give rise to sopor. In any case would not the two considerations have sufficed to settle the difference in the absence of the clinical features of cerebral tumour? From the beginning of the first focal symptoms up to the occurrence of the severe manifestations of cerebral pressure there had only elapsed seventeen days—a length of time which even for cerebral abscess is unusually short, and for a tumour quite unheard of. Again, a cerebral tumour, when it has reached such a stage as to produce intra-cranial pressure, may be accompanied by slight remissions, but never by a rapid and frequent change from day to day, or, within a few hours, from coma to consciousness and again back to coma.

Von Bergman¹ lays great stress upon this variation in pressure symptoms for differential diagnosis, it being often observed in cases of cerebral abscess. In the foregoing case there was the further circumstance to obscure the diagnosis, that the otitis had run through its course very quickly, and had got well without affecting the bones. Even before the first focal symptom showed itself there was, on the other hand, this

¹ "The Surgical Treatment of Diseases of the Brain." 1889. Berlin: Hirschwald. Page 76.

important diagnostic feature, that the rise of temperature did not originate in the ear trouble directly, but had to be attributed to an infective focus of inflammation. Von Bergman's statement¹ that in otitic cerebral abscess the pyrexia is of little or no significance for the diagnosis from tumour is equally true in the ordinary condition of things in otitic cerebral abscess, if the aural suppuration still continues, because, although the suppuration in the ear very often runs a feverless course, the occurrence of an elevation of temperature is no proof of the presence of a second focus of suppuration, so long as there is the possibility that it can depend upon a suppuration in the middle ear or in the mastoid which can be laid open, but in the foregoing case the raised temperature could not be explained by the condition of the ear, and, as no cause for pyrexia could be found in any other part of the body, this symptom was in favour of the diagnosis of abscess, and against that of tumour. The fact that the elevation of temperature was very slight could not cause any error. It was sufficient that it was unquestionably above the normal. An anal temperature of 37.7 is not found in the healthy adult. Further, there existed a doubt during deep coma as to whether the abscess was still in a stage for operation or had ruptured into the ventricle. The retention of reflexes, the absence of rigors or vomiting, were against the probability of rupture; the smallness of the pupils was no assistance in the solution of this question, because in rupture into the ventricles Knies had found myosis; Korner, on the other hand, mydriasis. Although coma had supervened, the case had to be looked upon as suitable for operation. The paralysis of the opposite hand indicated that the abscess had to be sought for in the temporal lobe, in spite of the unique contradictory case of Glück,² in which a small cerebellar abscess had given rise to the pontine symptom of opposite-sided hemiplegia. It was difficult to understand on the hypothesis of an abscess of the temporal lobe the supervention of a paralysis of the sixth nerve, especially side by side with immunity of the oculo-motor, close to which the abducent nerve crosses the middle cranial fossa in the cavernous sinus. On purely anatomical considerations the paralysis of the sixth would tend to nullify the diagnosis of the site of the abscess in the temporal lobe, and would support the idea of there being an abscess—possibly a second abscess in the cerebellum or the pons, as the abducent nerve is much more freely exposed in the posterior than in the middle fossa.

In Mauthner's description of fascicular paralysis is found the following cut and dried statement: "Pure cases of paralysis of the sixth, with "opposite-sided paralysis of the extremities, are very rare. Should, "however, such a condition be found, one would then be justified in "supposing the existence of a focus of disease in the pons, just where "the sixth nerve traverses it." Clinical experience, as the cases of Hessler and Polo show, teaches us that paralysis of the sixth does occur along with abscess of the temporal lobe. Hessler's case is, in this respect, very significant, but in the case of Polo's patient, in which a *post-mortem* examination was not obtained, the possibility of a complication situated in the posterior cranial fossa could not be excluded.

¹ *Loc. cit.*, page 40.

² "Berlin Chir. Monats.," 1891, page 1146.

In my patient the localization in the temporal lobe was all the more probable because the otitis had run its course without an affection of the mastoid process, as invasion of the middle fossa by the morbid elements from the tympanum and through the tegmen tympani is readily intelligible, whereas it would be difficult to realize their making their way to the cerebellum or the pons.

The typical operation of opening otitic abscess of the temporal lobe, according to Von Bergman's method,¹ was decided upon and carried out on the 31st December. As the patient was not in a position to be moved I had to operate in his private dwelling, where I was assisted by Drs. E. Miller and Steele. After the cutting of a cornered flap in skin and muscle, measuring about five centimètres along each side, and close about the attachment of the concha, the soft parts and the periosteum were separated, and were turned upwards against the base of the flap. With chisel and bone forceps, a round hole three centimètres in diameter was made in the squamous bone, which appeared perfectly healthy. The dura mater was distended; there was no cerebral pulsation, but there was a feeling of fluctuation. A branch of the middle meningeal artery passed horizontally across the field of operation. On the first puncture of the dura a yellowish-green pus made its escape. The dura mater itself had attached to it a layer of cerebral tissue of a few millimètres in thickness. On syringing out the abscess cavity with sublimate lotion the pus came out in large gelatinous flocculi, similar to mucopurulent tympanic secretion. The pus was free from fœtor. The dura mater over the abscess was then removed, and it was then striking to find how small the abscess cavity was in consideration of the severe symptoms of cerebral pressure which had been present for several days. It measured only two centimètres in depth. There was no escape of cerebro-spinal fluid; drainage and dressing were carried out; the temperature was 36.4.

On the 1st January the dressing was changed; the drainage tube was full of pus, otherwise syringing brought out very little more. The intelligence was clear, the speech still impeded, and there was great debility. The temperature in the morning was 38.1, in the evening 38.2; pulse 116. On the next day the general condition was altogether better, the morning temperature being 36.9, and the evening 37.7, the pulse 104.

On the 3rd January the dressing was again changed; there was a little pus; the intelligence was singularly clear; the patient spoke reasonably of things that had previously happened, thanked his nurse, and enjoyed his food, but he had the delusion that next his bed there was a staircase leading down to the room below. Paralysis and hyperæsthesia of the left hand still persisted, as also did that of the sixth nerve. His temperature in the morning was 37.5, in the evening 38, his pulse 92. Next day he was somewhat sleepy, but his answers were perfectly correct. His morning temperature was 37.7, and in the evening 38.2, and his pulse 92. On the 5th, when the dressings were changed, there was very little secretion, and his urine was found to be free from albumen. On January 7th his general condition and appetite were good. Occa-

¹ *Loc. cit.*, pages 63, 64.

sionally when speaking he wandered, but he soon detected his own mistakes. The dressing was again changed. His obstinate constipation was removed by means of enemata. His pulse remained between 92 and 96; his evening temperature reached 38, and the morning remissions amounted from a half to one degree.

On the 11th January his temperature still remained at 38, and his pulse at 92; his appetite and general condition were satisfactory. Almost every day he had short periods of mental wandering, after which his intelligence became quite clear again. On the 15th, up to which time the dressing was changed every two days, the pus was no more in quantity than could come from healthy granulations. The drainage tube had gradually been shortened. The evening temperature had sunk to 37.7, the pulse to 88. The patient was for the first time allowed to get out of bed supported on both sides. The left leg doubled up, and the patient reeled towards the left side. The patellar reflex was somewhat increased on the left side, but foot clonus was, on the contrary, more marked on the right. Passive resistance was much weaker in the left than in the right leg. The left arm when held stretched out fell down more quickly than the right one, and the pressure with the left hand was distinctly weaker than with the other. Sensibility seemed to be equal on both sides. The paralysis of the sixth nerve still continued; the general condition was satisfactory, the granulations looked healthy.

On the 19th January the patient stayed up for two hours. His intelligence continued clear, and the blanks in his mental condition got less. His evening temperature was 37.3, his pulse 72. On the 22nd the weakness of the left leg had so far diminished that the patient could walk without support. Six days later, after a considerable period of absence of fever, his evening temperature rose to 38.2. He then became affected with vertigo, frequent vomiting and noises in his right ear. The granulations still looked healthy, but the whole of the region of the wound appeared bulging as if from commencing collapse of the brain. Round the wound there was a slight degree of œdema, and in the remains of the wound cavity there was a pulsating reflex. The vomiting passed away in two days, but the vertigo remained, his evening temperature standing at 38.9, his pulse counting 100. The œdema of the wound became less.

On the 2nd February, after an evening temperature of 37.7, pulse 84, his temperature rose to 38.5, pulse 104, but there was no headache, no vomiting, very slight vertigo, but pain in the region of the loins.

On the 3rd February the pains extended along the vertebral column on pressure of the spinous processes, and in the nape of the neck when the head was moved. He felt faint, and once vomited. He was very restless in the night, and had an anxious expression of countenance. The intelligence was clear. There were no longer any œdema or bulging of the wound. The temperature was 38.7, and the pulse 98.

On the 5th February he had a very restless night with pains in the back and in the frontal region, and a slight degree of stiffness of the neck; his appetite quite gone. On looking towards the left, nystagmus occurred. His expression betrayed great suffering, and his breathing was accelerated.

The region of the wound again bulged slightly. His evening temperature was 38·8, his pulse 102. There was no albumen in the urine, but about one per cent. of sugar. Next day he spoke a great deal and wandered, but gave correct answers to questions. There was a tremor of the extremities, and nystagmus when the eye was turned to the right. The pupils reacted well, but the right one was somewhat wider than the left; the neck and loin pains still continued. There was jactitation and working of the bed-clothes. The temperature was 38·3, the pulse 130.

On the 7th February he died. *Post-mortem* examination made twenty-one hours after death by Dr. S. Merkel. The subject was a strongly-built man, with a firm panniculus. The dura mater at the site of the operation had become adherent to the skull. On removal of the brain there remained an oval body of about five centimètres in its longest diameter, about the size of a walnut, adherent to the inner side of the cicatrix, which was drawn out of the softened temporal lobe. On section it turned out to be an encapsuled abscess, lined with a membrane of about one millimètre in thickness, which was attached by a wide short pedicle to the inner surface of the operation scar. The veins of the pia mater were distended, the convolutions flattened, and the sulci obliterated. There was circumscribed purulent lepto-meningitis of the left sylvian fissure, and diffuse lepto-meningitis of the base. The lateral and the fourth ventricles were distended and filled with a sero-purulent fluid. The brain substance was soft, and presented no other foci of disease. There was an area of softening in the affected temporal lobe round the encapsuled abscess. In apices of both lungs there were old cicatricial nodules, and there was commencing sclerosis of the aorta. The spleen was soft, the kidneys showed slight chronic parenchymatous changes, and there was commencing fatty degeneration of the liver. On section of the temporal bone the cerebral blood-vessels were found free from thrombosis. The surfaces of the petrous bone, after removal of the dura, were free from inflammation. The mastoid cell, when sawn open, appeared diploetic and healthy. On the inner surface of the dura mater, at the site of operation and round the pedunculated encapsuled abscess, as also over the area of the squamous bone, there was softened brain substance adherent to the soft and hard membranes. The sixth nerve was exposed in the whole of its course through the non-thrombosed cavernous sinus, and it showed no changes.

Remarks.—The interesting features in this case are the occurrence of an abscess after an acute otitis, which had healed up before any evidence of the formation of the abscess was given. Further, in several rare symptoms which were difficult to explain, and in the occurrence of a second abscess which remained unopened at the operation, and which, in spite of its proximity to the wound, did not open into this, but set up encephalitis and lepto-meningitis, producing a fatal result. For an acute otitis to occasion cerebral abscess is in itself rare; according to Janssen, out of 2650 acute middle-ear inflammations seen in Berlin there was only one cerebral abscess, while out of approximately the same number of chronic otorrhœas (2500) there were six. According to Grunert, otitic cerebral abscess arises in ninety-one per cent. of the cases out of chronic,

and only in nine per cent. out of acute otitis. Still more remarkable was the etiology of the abscess described from the circumstance that the acute otitis without implication of the antrum, and without any complicating otitis or periostitis, had healed completely and run its entire course before the cerebral abscess came out of its latent state. Literature affords only one similar case, namely, the one communicated by Von Bergman, which was under Schmidt's observation, and was not operated on. Gruber's case, mentioned in the same place, differed from it in so far that the acute otitis had extended to the mastoid process and had then completely healed, remaining so until the abscess gave rise to symptoms which in a short time led to the death of the patient.

The case described by Baginsky and Gluck is put forward as one of healed otitis, but in the course of the description there is described the presence of a perforation, as also of "a slight discharge hardly worth mentioning." This is not healed otitis.

The abducent paralysis, which in the diagnosis was so difficult to bring into accordance with the idea of abscess of the temporal lobe, was not explained by the dissection. As this paralysis was at one time the first focal symptom when œdema of the brain and rise of intra-cranial pressure was still unrecognizable, we cannot ascribe it to distant action upon the nuclear region in the floor of the fourth ventricle, even if we were willing to leave out of account the great unlikelihood that disease in the middle cranial fossa should by mere cerebral pressure exercise a paralyzing effect upon a single nucleus situated at such a distance from it, and should leave all the other motor centres undisturbed. In its course across the middle cranial fossa, the abducent nerve is imbedded in the cavernous sinus, and is protected by this. Since the sinus remained free from thrombosis any injury of the nerve in this part of its basal course must be excluded. We would then have to resort to the explanation of this early and isolated abducent paralysis and temporo-sphenoidal abscess by means of the fascicular connection of the nerve between the nucleus and the cortical centre theoretically belonging to it, or to a lesion of this centre in the cortex itself, were it not for the circumstance that the paralysis of the abducent nerve occurred upon the same side as the abscess, which would render impossible the assumption of a lesion situated on the other side of the nucleus. The abducent paralysis, therefore, remained still unexplained. Knies¹ quotes several observers of such "paradoxical distant effects."

During the later days of life nystagmal movements were observed when the patient looked to the side. This ought to be placed side by side with the cortical form of "nystagmus-like twitchings," described by Knies (pages 82 and 84), which this author considers to be a kind of shaking palsy caused by weakened but not completely interrupted nerve conduction. The diabetes which came on towards the end of life could be explained by the effusion into the ventricle.

The operation was unsuccessful because a second temporo-sphenoidal abscess, situated close to the first, led to death from encephalitis and lepto-meningitis. It may be asked whether the second abscess existed

¹ *Loc. cit.*, page 143.

already at the time of the operation, or whether it developed during the five weeks following it. The first is the most likely. The striking disproportion observed at the time of the operation between the smallness of the abscess cavity and the severity of the rapidly-developed symptoms of intra-cranial pressure forced us to the opinion that the abscess which remained unopened was the chief cause of the mischief, and in the same way we must explain the persistence of pyresis after the operation.

The occurrence of multiple cerebral abscesses is more frequent when of pyæmic and metastatic, than when of otitic origin. At the same time, even in the latter, the existence of a second abscess does not seem to be so extremely rare as the statistics collected by Körner (page 89) seem to show. Out of 10,000 cases of ear disease, I met with abscess of the brain four times. On two occasions they were double, and both times without suppuration of the sinus, and without other foci which could justify a supposition that the abscesses were metastatic. (Compare the "*Arch. für Ohrenheilkunde*," Bd. XXX., pages 61, 62, and the case here described.)

Janssen¹ lost one case of abscess operated on through a second abscess similar to the above. Further, in the "*Zeitschrift für Ohrenheilk.*," Bd. XXVI., a case published by Knapp was one of double abscess, and afforded a very remarkable contrast to the history of my operations in several respects.

In Knapp's case there was the development of a prolapsus of the brain, which, along with the accompanying symptoms, led to a sufficiently early diagnosis, and to the life-saving operation on the second abscess. In my patient the supposition of the existence of a second abscess was suggested by the continuance of the fever, the very slow retrogression of the paralysis, and the disturbances of consciousness which lasted for weeks after the operation, although with diminishing frequency and intensity. Along with the comparative euphoria, the disappearance of the headache, and of the hyperæsthesia of the left arm, the slow but still unmistakable diminution of the paralysis of the hand, it was particularly the healthy appearance of the operation wound which fostered deceptive hope, and deterred us from a second operative procedure. When later a slight œdema of the region of the wound showed the first alarming sign, at once there followed the symptom of leptomeningitis, and the stage of unfavourable prognosis. Daily surgical experience teaches that growing abscesses push towards the surface of the body, and that after an incision removing the tension of the skin and fasciæ, even when not opening into the cavity, they shortly break through. We must not look for a similar course in abscess of the brain, as this distressing experience shows. In spite of the fact that the cranium was freely opened, the bridge between the two abscesses was only a few inches in thickness, and the drainage tube must have been frequently pressed during manipulation, and continuously by the bandage, yet the abscess did not empty itself in an outward direction, but prosecuted its development in another direction. Körner (pages 88 and 89) concludes

¹ "*Berl. Klin. Wochenschr.*," 1891, pages 1160-63.

most properly from the beginning of otitic brain abscesses in the cortex, and from their later position, they grew ex-centrally, and in point of fact centripetally. [Not equally in all directions, but towards the centre of the brain.—*Trans.*]

This case teaches us that after operation on a cerebral abscess, if there is a continuance of the fever, and tardy retrocession of the distant symptoms, we must think of the existence of a second abscess, and endeavour to effect its evacuation.

II. *Sinus Phlebitis*.—Carl S., aged fifteen and a half, a tall, thin, narrow-chested boy, whose father appears to have died of acute pulmonary disease, but whose mother was healthy and strong, was affected in 1891 with a left-sided otitis, which was treated outside, and got well. There remained cicatricial changes in the left membrane, and a slight degree of dulness of hearing on that side.

On the 14th October, 1893, he came under my treatment with acute suppurative median otitis of the right ear of eight days' duration. The course of the affection was uncomplicated, but dragged on until the 12th November. On this day there occurred severe pain in front of and in the ear, as also on the mastoid process, with feverish symptoms, and a small but very tender swelling over the zygoma above and in front of the auricle. On the 13th November the patient was taken into the hospital, with an evening temperature of 40·7 and a pulse of 120. In spite of free enlargement of the somewhat narrow perforation and antiphlogistic treatment, the evening temperatures reached 40, with very slight morning remission. On this account recourse was had upon the 16th November to the radical operation according to Zaufal's method. The soft parts over the mastoid process were raised up by the suppuration which appeared to come down from before and above. Under the thin cortex of the process, pus made its appearance after the first few cuts with the chisel, and there was found an extensive carious destruction as far down as the tip of the process. For the better exposure of the parts, there was added to the semicircular incision round the concha a second horizontal one, carried backwards, and the cortex of the whole of the process was removed. The softened parts of the lower portion of the mastoid, which were beset with granulations, were cleared out, and the posterior wall of the osseous meatus was removed. In the superior angle of the wound pus came to light below the temporal muscle.

After detachment of the posterior bundles of the muscle and retraction of the soft parts forward towards the temple, a large carious spot was found in the root of the zygoma, and this was removed by means of bone forceps and a sharp spoon. The breaking down of the bones extended from the neighbourhood of the antrum so far upwards that the dura mater of the middle cranial fossa became visible and was laid bare to an extent of three centimètres from before backwards, and two centimètres from below upwards at that part where the lower wall of the fossa merged into the lateral one. The dura mater had a normal appearance, but the cranial contents bulged considerably into the opening. A pledget of cotton wool moistened with weak sublimate solution was laid upon the dura mater, and the caries was followed towards the middle line in the direction of

the tympanum. The wide opening made it possible to see the incus and malleus imbedded in granulations, and to remove them. In the posterior direction the operative proceedings did not extend to healthy bone, and furthermore it was found on further advance that the caries had extended to the posterior cranial fossa. Between the bone and the sinus there was an escape of pus, and it was certain that the lateral sinus was exposed to an extent of more than three centimètres. The wall of the sinus was discoloured and collapsed, so that it was certain that there was suppurative thrombosis.

After the caries had been followed up in every direction, and completely removed to such an extent that the whole of the large opening was surrounded by healthy bone, the operation reached a critical point. It was certain that the transverse sinus had to be dealt with. On the other hand, the marked bulging of the dura mater out of the middle fossa gave rise to the suspicion that the temporal lobe might conceal in its interior an abscess which had followed a clinically latent course. As operative procedure on the sinus might easily lead to severe bleeding and interruption of the operation, I determined, in the first place, to carry out exploratory puncture of the temporal lobe, and only after that to attack the sinus. With a Graefe's cataract knife, a puncture to the depth of about two centimètres was made obliquely downwards in the direction of the tegmen tympani. No pus issued, but there was a jet of dark venous blood, which could be stopped neither by means of forceps nor compression with iodoform gauze. There was nothing else now to do but to interrupt the operation, and to apply an iodoform compress, which is known to be sufficient to control even severe bleeding from the sinus. The operation had lasted two hours. The amount of chloroform used (by means of Kapellar's apparatus) was only thirty cubic centimètres. The temperature rose in the evening after the operation to 40·8, the pulse was 130, the respirations 44.

On the 17th November there were pains in the ear, great restlessness but clear intelligence, no vomiting, no focal symptoms. The facial nerve was normal. Morning temperature 40·6, the evening one 40·3, pulse 124, breathing 32. In the night between the 17th and the 18th there came on, without any external cause, a bleeding from the nose, which could be attributed to thrombosis of the petrosal sinus. The morning temperature on the 18th was 39·9. The dressing was removed, and the bleeding from the middle fossa was found to have ceased. Exploratory puncture of the discoloured and relaxed transverse sinus, by means of a hypodermic syringe, withdrew turbid bloody fluid. The sinus was then slit up for two centimètres in length. It was found to contain crumbling, slightly bloodstained pus, which was cleared away from the necrotic wall of the sinus by means of a sharp spoon. On irrigation with sublimate solution there supervened at once a discharge of dark venous blood from the sinus, flowing in quite a flat curve and with little force. Compression was applied. On the application of the dressing there was for the first time remarked a painful œdema extending down to the clavicle, and under it a hard swelling in the region of the internal jugular vein. Neither of these was present before the operation. In view of the

thrombosis of the jugular extending so far down, there was no question of ligaturing this vessel. The evening temperature was 39.9; at night there was restlessness and great sweating, but no rigor. A small quantity of sanguineous sputum aroused suspicion as to pulmonary metastasis, but nothing could be detected in the lungs and the respirations corresponded to the temperature. On the 19th there occurred for the first time a remission of temperature to 37.4, the pulse being 76. During the following days there were oscillations of temperature from a considerable height in the evening down to a nearly normal point in the morning, with acute angles, so that now, for the first time, the type of pyæmic fever presented itself. Even at this time there was an absence of rigors and the general condition was relatively satisfactory.

On the 22nd November, during the change of dressing, a splinter of bone came away from the lower wall of the sigmoid fossa. The patient complained several times of pains in various toe joints, but nothing objective was detectable. The œdema and induration along the jugular vein still persisted. On the 24th November there was found during the dressing a slightly bulging, fluctuating and painful spot, from two to three centimètres in diameter, above the right eye, and between the temporal part of the supra-orbital ridge and the hairy part of the scalp. This was incised under the ether spray, and pure pus evacuated. This was the first and only metastasis during the whole course of the illness. On the right side of the neck the pain and the swelling extended to the inferior cervical triangle above the clavicle, and applications of ice were called for. The fever diminished from the day on which the abscess on the forehead was opened, and up to the 13th December remained about 38°. From time to time small sequestra made their way out of the sigmoid fossa.

On the 29th November the wound had diminished to eight centimètres in width, and was granulating well. About that time some anxiety was occasioned by the occurrence of a disproportion between the low temperature and the frequency of pulse, which reached from 120 to 130, because it might be interpreted to indicate a paresis of the vagus caused by the thrombosis of the jugular vein. Under the influence of *strophanthus* tincture, however, the pulse improved in a short time, and the general condition was extraordinarily good during the period of the convalescence. In the beginning of January an inflammatory swelling occurred below the point of the mastoid process, but it suppurred later on, and was opened. The œdema and the induration on the side of the neck, which extended down to the clavicle, gradually disappeared without the formation of pus.

On the fifteenth of the month the patient was allowed to leave the ward. In the course of the subsequent months, from time to time, small sequestra made their way out through a fistula, which corresponded to the position of the transverse sinus, while the rest of the surface of the wound, including the tympanum, became covered with smooth epithelium and remained dry. In the beginning of September these fistula finally closed up. The contents of the suppurating sinus presented on a cover-glass preparation beautiful chains of streptococci, and these bacteria could

also be obtained in pure culture from the sinus pus. In the last abscess found in January below the mastoid process streptococci could also be detected. The clinical aspect of the whole case gave one the impression of a tubercular disease of the bone, although it was impossible to prove the presence of tubercular bacilli. At the present time (the end of December) the condition and appearance of the patient are very good, but the resident physician has been able recently to detect some dulness on percussion at the apices.

III. *Otitic Pyæmia without Sinus Phlebitis*.—Fred B., aged fourteen, was attacked on the 20th January, 1893, with acute otitis media in the right ear, following inflammation of the throat. On the 21st the tympanic membrane was of a bright red, unperforated, and there was considerable pyrexia. On the 24th the pain continued to be severe, and as the pus had not yet made an exit I performed paracentesis. Thereupon the boy sprang so rapidly up from his seat that the needle was driven out of my hand and flew across the room. The paracentesis, however, was sufficiently extensive, and there was no evidence of collateral injury. Next day the pain remained unchanged in spite of antiphlogistic treatment and the administration of salicylate of soda; the mastoid process was tender on pressure, but free from swelling or redness. On the 27th the pains became less, but the boy's friends were struck by his sleepy condition and his frequent rigors.

On the 28th the chill returned, and the temperature, which hitherto was 39, reached in the evening 41. With this the pain in the ear and in the mastoid process disappeared, the pus made its way freely into the meatus, and no obstruction to its outflow could be found. On the 29th the morning temperature was 38.5, and the evening 40. On the 30th there was pain in the neighbourhood of the clavicle. The resident physician, Dr. Schilling, detected acute endocarditis and metastasis into the right sterno-clavicular joint, which was swollen and tender. My opinion then was in favour of opening up the mastoid process, and laying bare the sinus, thrombosis of which might be found to be the cause of the pyæmia, in spite of the fact that the mastoid at that time was quite free from tenderness. On account of the endo-carditis, Dr. Schilling considered the patient unfit for chloroform. Our treatment then consisted of the administration of quinine, and the application of ice. Within the next few days pains came on in the right shoulder joint, and at the second and third spinous processes of the cervical vertebræ, accompanied by a high evening temperature, with morning remission. The appearances in the ear showed an unexpectedly favourable course of events. There was a cessation of pain on the affected side of the head, and the perforation finally closed up on the 5th February. Soon after this the fever and the endo-carditis retrogressed, and the metastatic accumulations in the clavicle and shoulder-joint became absorbed without suppurating. On the 7th March the boy came to show himself as being perfectly well. The tympanic membrane was pale, and showed no cicatrix; whispering voice was heard from the distance of from six to seven mètres.

Remarks.—The clinical picture of otitic pyæmia without sinus

phlebitis, as described by Körner¹, receives confirmation in several ways from this case. The occurrence with acute otitis, the favourable course without operative interference, the localization of metastasis in the joints, especially in those mentioned by Körner as the favourite ones, namely, the shoulder and the sterno-clavicular joint, fit perfectly well in the above stated scheme. The course of the affection demonstrated that the mastoid process and the sinus were free from pus, and that the operation, if it had been carried out, would have exposed normal parts. It is a matter of congratulation that Körner by his work has placed more clearly before the eyes of his colleagues this particular form of "osteophlebitic pyæmia." The cases are, perhaps, not so extremely rare, but they seem at times to run a very mild course, and only to be recognized by one or perhaps a few transient metastases which appear neither to impress the memory nor to be worthy of publication. To this class belongs my case, No. 17, published in "the Arch. für Ohrenheilkunde, Vol. XXX., page 62.

A still milder course was followed in a third case observed by me. After acute middle-ear catarrh, which cleared up within a few days without any pains worth mentioning, or implications of the mastoid process, there supervened shortly after the closing of the perforation, redness, pain, and swelling in several of the finger joints, which passed away without developing into abscess. The resident medical officer recognized this as metastasis arising from the ear. I was inclined to contradict this opinion because the inflammatory manifestations in the ear had already disappeared when the joint became inflamed. To-day I also would be inclined to reckon this as an instance of osteophlebitic pyæmia.

Dundas Grant (Trans.).

REVIEWS.

Pick.—*A Practical System of Studying the German Language for Physicians and Medical Students, for self-instruction.* By ALBERT PICK, M.D., in twelve parts. Published by Pick and Tanner, Newtonville, Mass.

THE title of the above work will appeal at once to a very large number of our readers, and, if possible, still more to the specialist than to the general practitioner. The method of interlinear translation, the advantages of which have received the recommendation of the highest authorities, is carried out in this system. The sentences employed are derived almost entirely from medical science. The difficulty of finding the most satisfactory equivalents for medical terms, whether anatomical, physiological, or therapeutical, is well known, and the present work affords a very easy means of smoothing this away. A much smaller portion of each part is devoted to practical conversation, and includes the phrases which are most useful in ordinary life. Towards the end of the second number we find a selection of phrases evidently intended to

¹ *Loc. cit.*, pages 78 to 83.

meet the requirements of those visiting medical societies, and desirous of expressing themselves appropriately: for instance, "Ist es wahr?" "Ja, es ist wahr," "Wirklich?" "Ich bin erstannt," "Das ist nicht wahr," "Das ist ein Irrthum," etc., etc.

It is unquestionably less difficult for the practitioner to acquire an understanding for medical German than for the German of every-day life. Many have no doubt been deterred from making themselves acquainted with the former through their being obliged to learn the latter first. The present work will alter the case entirely, and we trust that many will avail themselves of its advantages, so as to study in the original the many contributions to our specialty, which they have hitherto had to acquaint themselves with by means of a more or less satisfactory abstract. The conversations with patients about their diseases will also be found extremely useful. We may mention that the work can be procured with very little loss of time by the publisher of this Journal.

Dundas Grant.

Mygind.—*Deaf-Mutism.* By HOLGER MYGIND, M.D., Copenhagen. London F. J. Rebman, 11, Adam Street, Strand. 1894. Octavo. Three hundred pages.

THIS succinct and comprehensive study will be warmly welcomed by anthropologists and philanthropists, as well as by otological specialists. It commences with a definition of deaf-mutism as "a pathological condition dependent upon an anomaly of the auditory organs, either congenital or acquired in early childhood, causing so considerable a diminution of the power of hearing as to prevent the acquisition of speech, or—should speech have been acquired before the occurrence of the loss of hearing—as to prevent its preservation by the aid of hearing alone." This is followed by a rapid review of the ancient and modern literature of the subject. The various possible etiological factors are submitted to the most rigid and scientific criticism in the light of all the accessible statistics. Heredity assumes a new and important phase in the question when interpreted as applying to the frequency of deaf-mutism and associated nervous disorders in the relations of any given deaf-mute, and not merely to the transmission of the infirmity from one generation to the next. Poverty of surroundings and intermarriage are shown to have much more influence than the telluric conditions on which some writers have laid so much stress. The proportion of cases due to "brain diseases" and infectious diseases is shown to be very large. Strangely enough, mumps is found to be very rarely returned as a cause. Small-pox, in old statistics a very frequent factor, has in recent ones taken an insignificant position, thanks no doubt to the effect of vaccination. It will not surprise those who are familiar with the vagaries of the human being to find the operation of vaccination blamed in six out of the thousand cases of acquired deaf-mutism. This interesting chapter throws a flood of light upon ill-understood points in the etiology and pathogenesis of deaf-mutism. This masterly study in statistics is followed by an equally valuable analysis of the morbid anatomical changes found in all the cases of deaf-mutism in which the results of *post-mortem* examination have been published. The general deduction is

arrived at that in most cases deaf-mutism is the result of an abnormality of the labyrinth, usually the residuum of an inflammatory process, whether primary or propagated either from the middle ear or meninges, and of foetal or post-foetal origin, any evidence of congenital malformation being but seldom met with. The discussion of the facts upon which this conclusion is based is a most instructive lesson in the morbid anatomy of the organs of hearing. The symptoms and sequelæ are treated of in another chapter, and explanations are offered of many of the less obvious. Thus the fact that deafness is more nearly absolute in cases of acquired than of congenital deaf-mutism is attributed to the more destructive nature of post-nasal diseases of the ear as compared with those occurring *in utero*. We would suggest that a further explanation is offered by the probability that a greater degree of deafness is necessary to produce deaf-mutism in those who have at some time possessed hearing power than in those who have never done so. The singular association of retinitis pigmentosa with deaf-mutism, especially in Hebrews, is found to exist in acquired as well as in the congenital cases. The trifling element of hope in even congenital cases is illustrated in the section on prognosis, and among important points in diagnosis is the need for distinguishing certain cases of mutism without deafness from deaf-mutism, for which it may be mistaken. Many valuable and practical directions for the diagnosis of congenital from acquired cases, chiefly by means of the history, are given. To them might be added the question as to whether the child had ever been roused from sleep by noises (not concussions) or had always slept through them. Careful otiatric examination is insisted on in every instance, followed by removal of all possible causes of impairment of hearing. Urbantschitsch's acoustic exercises are mentioned with favour.

Without hesitating as to the superiority of the "oral" over the "sign" mode of instruction for deaf-mutes, Dr. Mygind hints that there are some pupils to whom it presents such difficulties that too much time would be occupied in it to the disadvantage of other useful acquirements.

We venture to say that few students can realize the amount of interest with which this subject can be invested until they have perused this charming treatise. The author's apology for defect of literary rendering on the score of his not being a native of these realms is either quite uncalled for, or else his indebtedness to Dr. Wolfenden for his revision of the language is a very large one. It would be difficult, indeed, to find a more readable piece of English.

Dundas Grant.

Joal—Wolfenden.—*On Respiration in Singing.* By Dr. JOAL, of Mont Dore.

Translated and edited by R. NORRIS WOLFENDEN, M.D., Cantab. F. J. Rebman, London. 1895.

THE translator of this excellent work states in his preface that he believes this book ought to be in the hands of everyone who aspires to sing, and it is precisely because he thinks it to be a valuable work, by a man who is both an accomplished musical amateur, the intimate friend of celebrated artists, and also an accomplished physician, that he presents it to English readers. This sentence admirably states the justification of

the translation, and the compliment paid to the author of the original treatise will be endorsed by all who study the work carefully. There are many works upon this subject at the disposal of the student, but we know of none calculated to give a better idea of the various theories at present taught.

Dr. Joal has written a work containing thirteen chapters in which he has treated the anatomy, physiology, respiratory types, ordinary and artistic respiration, history, education, hygiene of respiration, phonation, conditions causing lowering of the vital capacity, and each of these departments has been discussed in a clear, forcible and thoroughly scientific manner. Anyone reading the work cannot fail to see that it has been written by a master of his subject, whether from the medical or artistic standpoint. Considering the controversial nature of many of the questions submitted for consideration, nothing could be in better taste than the attitude which Dr. Joal takes up with reference to the opinions of others. All through the work one can see that the results arrived at have been the outcome of careful personal inquiry and impartial judgment. This is well shown in his remarks upon the different types of breathing; while he clearly admits that some good singers have been found to use a particular type of breathing, and that not the one which would lead him as the result of his experiments to recommend as the best, yet he does not say there is only one way of breathing for singers, and that way his own. It must not for a moment be thought, however, that Dr. Joal has not pronounced views on the best method; a consideration of his argument in favour of costal as opposed to clavicular or abdominal breathing will convince any fair reader of the strong reasons he has for the position taken up in the matter. We are pleased to note in passing that the views of one well-known authority on the subject in this country are stated to be less at variance with those of this work than was at one time believed.

The translation has fallen into good hands, and we must compliment Dr. Wolfenden upon his part of the work. The original text is excellently reproduced in our language, and Dr. Wolfenden has added some valuable points both in his preface and by way of notes. He makes one excellent suggestion with regard to voice training—viz., that it is highly desirable that an official scheme of instruction should be adopted, and one such could easily be formulated by a committee of laryngologists and singers. This scheme should be the basis of instruction in every board, public, and private school in the United Kingdom. The book, which has been neatly and efficiently published, will be found to be a most valuable work, not only for the pupil or teacher of singing, but also for any member of our profession desirous of obtaining a thorough knowledge of this important subject.

J. Macintyre.

NOTES.

FIFTH INTERNATIONAL CONGRESS OF OTOLOGY.

THIS Congress will take place in Florence on September 23rd, 1895, and will last four days, *i.e.*, until the 26th.

Certain theses will be selected for discussion, notice of which will shortly be sent to all otologists, with an invitation to take part in the work of this scientific meeting. It is requested that the titles of any communications to be made on Otology be sent to Prof. V. Grazzi, Florence (President), or to Dr. T. Bobone, San Remo (Secretary and Treasurer).

THE FRENCH SOCIETY OF OTOLOGY, LARYNGOLOGY, AND RHINOLOGY.

THE next meeting will be held in Paris on Wednesday, May 1st, 1895, at eight o'clock in the evening, at the Palais des Sociétés Savantes, Rue de Poitevins. The titles of any communications should be addressed before the 10th April to the Secretary-General, Dr. Joal, 17, Rue Cambacérès, Paris. The following subjects have been selected for discussion :—

1. Des bourdonnements et leur traitement.
Rapporteurs : MM. MIOT (Paris), HERCK (Paris).
 2. Des troubles neuro-moteurs du larynx.
Rapporteur : M. RAUGE (Challes).
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REQUEST BY Dr. MAXIMILIAN BRESGEN.

IN the endeavour to obtain for Rhino-Laryngology among special branches of medicine the appreciation which is due to it, I am occupied with an extensive treatise dealing with its importance generally and specially. I therefore beg all colleagues who have written any interesting articles, giving information upon this subject, to send to me copies of their works, with the parts referring to this matter underlined.

Dr. MAXIMILIAN BRESGEN.

Frankfurt-a-M., Gärtnerweg, 36.

THE INDEX MEDICUS.

WE have received the following letter, and willingly give it prominence. It would appear to us to argue a vast amount of apathy on the part of the profession that such a valuable work as this should be in danger of lapsing through want of support, and we can only express the hope that the subscribers will speedily reach such a number that the publisher may feel justified in continuing this most valuable and useful work :—

"Dear Sir,—In January, 1885, I entered upon the publication of the 'Index Medicus.' The scope of this publication, though doubtless familiar to you, is fully explained in the enclosed pamphlet, which was issued at the time.

"Each year during the interval has shown a deficit, and my only satisfaction has been the belief that the work was appreciated by scientific men in general, and by medical scholars in particular.

"The panic of 1893 and the ensuing hard times have diminished the number of subscribers while enlarging the amount of unpaid subscriptions. I now have to face the possibility of a still further reduction in the income of the Index for 1895, and I shall be constrained to discontinue the Journal with the December number, unless greater encouragement is bestowed on this enterprise by the physicians of America.

"Am I asking too much in bespeaking your energetic editorial influence to the end of increasing the subscription list of the 'Index Medicus' sufficiently to warrant its continued publication? Surely there are eight hundred physicians in high standing in America who must feel interested in the enterprise, and disposed to contribute to its support the sum of \$10 by way of subscription.

"I remain, with many thanks,

"Most truly yours,

"GEO. S. DAVIS,

"*Medical Publisher, Detroit, U.S.A.*

"P.S.—Should lack of sufficient support compel me to discontinue the publication of the 'Index Medicus,' all remittances will, of course, be promptly returned."

APPOINTMENT.

DR. HEMINGTON PEGLER, Hon. Sec. British Laryngological and Rhinological Association, has been appointed Assistant Registrar at the Central London Throat and Ear Hospital, Gray's Inn Road.

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**CASE of LARYNGEAL HEMIPLEGIA dependent upon
MALIGNANT PAPILLOMA of the BRAIN.**

By G. HUNTER MACKENZIE, M.D. (Edinburgh).

THE following case possesses certain clinical and pathological features of interest, and is accordingly deemed worthy of publication.

A. B., aged sixty, a typesetter, was sent by his medical attendant to the Eye, Ear and Throat Infirmary of Edinburgh, on 28th February, 1893, on account of throat trouble, with slight dysphagia. Five years previously he had suffered from transitory melancholia. His present illness was stated to have commenced about two months previous to admission.

On admission, he appeared old for his years, and was somewhat emaciated. His breathing was short, and voice husky, and there was slight occasional dysphagia. Urine, specific gravity 1018, acid, no deposits. Morning temperature, 98 degrees; evening temperature, 97 degrees; pulse, 106. On laryngoscopic examination there was seen complete respiratory and phonatory paralysis of the right vocal cord, which lay in the cadaveric position, and neither ab- nor adducted to the slightest degree during phonation or forced respiration. Its tension was also defective. There was no intra-laryngeal swelling. An œsophageal bougie passed without the slightest hitch. There was dulness above and below the right clavicle, and posteriorly on the same side there was a well-marked bulging in the supra-spinous region, with increased vocal resonance and bronchial breathing. Expectoration was absent. In view of the development and termination of the case, it is important to note that at this period there were no mental symptoms present.

A provisional diagnosis was made of pressure upon the right recurrent laryngeal nerve, most probably where it comes into relation with the apex of the right lung, probably by some old pleuritic affection, as indicated by the physical signs present. Free repeated counter-irritation over this region was accordingly recommended. He was also ordered iodide of potassium before food.

Under this treatment he made slight improvement. About the middle of March, however, he commenced to complain of giddiness; his speech had acquired a distinctly nasal intonation, and on attempting to swallow there was nasal regurgitation of fluids. When the head was tilted back he could swallow fairly well. On 3rd April his condition continued to deteriorate; on attempting to walk he staggered as if intoxicated, and on standing with his eyes closed he was markedly unsteady, with a tendency to fall to one side. The knee and plantar reflexes were normal, or exaggerated. The larynx was as before; the sinus pyriiformes and glosso-epiglottic fossæ were full of mucus; nasal intonation of words and regurgitation of fluids were more marked. His pronunciation of the alphabet was perfect; he could not whistle; the uvula pointed a little to the left, and the palate appeared to act equally on both sides. On 6th April an ophthalmic examination was made with the following result:—

OPHTHALMIC REPORT, BY W. G. SYM, M.D.

Both pupils act to light, but the left movements are freer than the right. Diplopia is present in an area limited to the upper and right side. On this matter his answers were uncertain, but *I think* the symptoms pointed to a paresis of the right superior rectus. The habit of spasmodic closure of the lids is probably *partly* due to a desire to get rid of the diplopia. Giddiness may also *partially* be accounted for by the diplopia, but only partially, for it still continues to some extent when either of the eyes is partially closed. Fundus shows nothing abnormal.

The condition of the pupil, and the state of activity of Müller's muscle on the right side, point to an irritation of the right sympathetic. So far as the eyes are concerned there is nothing at present to point to a central lesion, unless we except the (1) giddiness and (2, and very doubtful) the paresis of one of the ocular muscles. The absence of optic neuritis is, of course, so far as it goes, against a central lesion. But neuritis may yet come on.

On the 15th April he was reported as incoherent in conversation, and as being restless and talkative all night long. From this date, until his death on the 28th, he was confined to bed, having become semi-comatose and quite unable to walk or stand. The laryngeal and allied symptoms continued as already stated.

ABRIDGED PATHOLOGICAL REPORT, BY R. F. C. LEITH, M.B.

Lungs and Pleura.—Strong adhesions bound the apex of the right lung to the anterior chest wall, especially opposite to the second rib. The lungs were somewhat congested, but otherwise normal. No tumour was present in any part of the thoracic system.

Larynx.—Both cords were in the cadaveric position, and exactly resembled one another. There was a small collection of food particles in both ventricles, and also on the wall below both cords, this being more pronounced on the left than on the right side. Both vagi and both recurrent laryngeal nerves were examined, and found normal and free from any local pressure. The muscles of the two sides of the larynx were carefully examined, but no difference between them could be detected.

Liver.—The liver was the seat of a number of simple angiomatic tumours of unusually large size.

Brain.—On the under surface of the cerebellum three distinct tumours were seen, slightly raised above the surface. The largest of these, about the size and shape of a hazel-nut, with its long axis placed transversely, occupied a part of the flocculus and the bi-ventral lobule on the right side. The smallest lay near it, about one-fourth of an inch behind and a little further out, while the medium-sized one lay in the postero-inferior of the left side, near its internal margin. In addition to these, there were five or six other tumours varying in size, mostly situated close to the surface of the grey matter; but two at least were quite imbedded in the white matter. On section, these tumours all resembled one another; they had a yellowish-white centre, with a well-defined reddish periphery, the smaller ones being entirely reddish. They were fairly firm and well-defined; in some cases reaching the surface, in others having a thin layer of grey matter outside them, or being entirely in the white matter. The first-mentioned and largest of the tumours might have exerted a varying pressure upon the roots of the right vagus nerve, as it was close to it; but I particularly noticed that the nerve was not at all flattened, and, moreover, the nucleus of it and the other basal nerves were seen to be normal.

No tumour was seen projecting above the surface of the cerebrum, or visible on external examination, but on section many separate tumours were found scattered throughout its substance—*e.g.*, in the corpus callosum, in the upper end of the right ascending frontal, in the right ascending parietal, in the left superior occipital, in the left island of Reil, etc. There were about fifteen or sixteen such tumours in the cerebrum, the largest being about the size of a hazel-nut. On section, they exactly resembled those in the cerebellum, but in all cases they lay below the surface of the cerebrum. The surrounding brain tissue showed the appearance of an ordinary encephalitis, mostly of a comparatively recent origin. No tumour growths (except the angiomatic already reported as having been present in the liver) were found in any other organ or tissue in the body.

REMARKS BY DR. LEITH.

The chief interest of the case lies in the nature and origin of the brain tumours, and their possible relation to the laryngeal paralysis observed during life. I do not intend, at the present time, to discuss either of those questions. I may merely observe that I do not believe that the paralysis arose from any peripheral or central basal lesion. Any pressure

which the contiguous tumour could have exerted upon the root of the right vagus must have been slight and intermittent, probably existing, if it actually did so, only during periods of basal congestion. It is more likely that the paralysis was of cortical origin. As to the nature and origin of the tumours, I will content myself by saying that I regard them as malignant papillomata, originating in the substance of the brain. Their structure closely recalled that of a papilloma of the bladder, and had such been found the cerebral growths would obviously admit of a simple explanation, but this viscus was apparently healthy. The structure of the tumours was exactly what we would expect had they taken their origin from the ependyma of any of the ventricles, as in the case recorded by Coats in the "Transactions of the Pathological Society of London" (Vol. XXXIX., pp. 5 *et seq.*); but in the present case none of the tumours bordered upon any of the ventricles. Again, so far as the outer surface is concerned, the epithelium of the tumours was so unlike that of the pia mater that it is impossible for it to be regarded as their source of origin. There remains only the brain substance, and as this normally contains no epithelium from which the tumours can grow, the only alternative which would seem to be possible is to fall back upon the embryonic theory of Cohnheim.

REMARKS BY DR. MACKENZIE.

The interest in this case, so far at least as this Journal is concerned, is centred in the occurrence of laryngeal hemiplegia, and in its direct cause. There is no doubt that paralysis of the left vocal cord was an early and persistent feature of the case, and, what is of importance, the expert pathologist who performed the autopsy has expressed the opinion that this unilateral paralysis of the cord was not due to any peripheral or central basal lesion, but was more likely of cortical origin. According to the experimental researches of Semon and Horsley, paralysis from a cortical lesion is always bilateral. There is, say they, no such thing as unilateral paralysis of a vocal cord from lesion of a cerebral hemisphere. The absence of any indication of pressure by the contiguous tumour upon the roots of the vagus or spinal accessory nerve, and the normal condition of the nuclei of these nerves, merit special attention, and indicate, as the pathologist has remarked, that the causative lesion was not a basal one. The cadaveric position of the affected cord also points in the same direction, for it has long been known that direct pressure upon the vagus or spinal accessory nerve always places the vocal cord in the position of extreme adduction. It would thus appear that further clinical and pathological proof is required before the results obtained experimentally by Semon and Horsley upon the monkey, the dog, and the rabbit can be considered as applicable to man.

SOME REMARKS upon so-called FOLLICULAR ANGINA, and its relation to DIPHTHERIA.

By Dr. JOHN SENDZIAK (Warsaw).

SO-CALLED follicular angina is a disorder with which not only the specialist but even the general physician has very often occasion to meet. Yet, as to the correct diagnosis or the rational treatment of this disease, no clear idea can be perceived among physicians. This applies especially to the relation of this disorder to true diphtheria of the pharynx.

Upon this question—very important from a practical point of view—I should like to say a few words, based upon my clinical experience and bacteriological researches.

Under the term follicular angina we understand an acute process, accompanied by more or less fever—a process of an undoubtedly infectious origin, which is characterized by the appearance of yellow or greyish-white spots (membranes), localized in the crypts. As to the definition itself, there may be observed some inexactitudes. The term follicular angina is improper, because the process is localized only in the tonsils, *i.e.*, their crypts.

On the other hand, the attribute “follicular” is not in accordance with fact, since the anatomo-pathological researches of Drs. Dmochowski and Sokolowski¹ prove that the follicles are not affected in this disorder. We must, therefore, reserve only one rational definition, *i.e.*, lacunar tonsillitis, adding at the same time “acute,” in order to distinguish it from the chronic process, also localized in the crypts of the tonsils, which is known under the term “caseous” tonsillitis, or properly chronic lacunar tonsillitis. This term I shall always use in this paper. It is also applied by Prof. Jurasz of Heidelberg, in his recent manual of diseases of the nose and throat.²

Acute lacunar tonsillitis occurs very frequently. Indeed, during the three past years I observed 133 cases of this disorder out of the general number of 3470 patients, which makes about four per cent. (3·8 per cent).

Sokolowski and Dmochowski have also often observed this disease, namely, about five per cent. (out of 3482 cases, 169). It is astonishing, however, that Jurasz, in a period of about eight years, out of more than 4000 out-patients, has only noticed twenty-four cases of acute lacunar tonsillitis. It may be that there exist in our country (Poland) certain conditions which favour the development of this disease, as is the case, for instance, with peritonsillar abscess, which disease is here exceedingly frequent, while in other countries it occurs much less frequently. Jurasz, for instance, cites only eight cases of this disorder.

We must, however, not forget that strict statistics are impossible, because, as we shall see later, there are pathological processes, intermediate

¹ Przyczynek do patologii i terapii spraw zapalnyeh migdalhou. “Gazeta lekarska,” 1891.

² Die Krankheiten des Rachens, 1891, p. 122.

between diphtheria and acute lacunar tonsillitis, which it is impossible to describe under the one or other category, but only by the clinical picture. Only the bacteriological investigation could solve this question; unfortunately, it cannot be always performed.¹

As to the question of which sex is oftener attacked by this disorder, relying on my observations, I have not been able to remark any noticeable difference (out of 133 cases, there were sixty-three men and seventy women). Jurasz seems also not to ascribe any importance to sex, although he observed this disease a little oftener in men (seventeen cases) than in women (twelve cases).

As to age, I only observed one case below one year (a girl of six months): most frequently I met with acute lacunar tonsillitis in the third decennium (sixty-one cases), and very frequently I observed this disease between the tenth and twentieth years (thirty-seven cases), less often in the period between thirty and forty years (eighteen cases), five and ten years (six cases), one and five years (three cases), and three cases between forty and fifty years; only two cases between fifty and sixty, and sixty and seventy years each. The oldest of my patients was sixty-two years of age.

Jurasz also observed this disease most frequently between the second and third decennium (twenty cases).

As to the *etiology* of this disorder, there cannot be the least doubt that it is of infectious origin (Bouchard, Leyden, Semon, Seifert, etc.). In favour of this supposition the whole clinical picture speaks: acute beginning, chills, general weakness (fever, etc.), and its appearance epidemically, in the shape of the so-called house epidemics (B. Fraenkel, Jurasz, etc.).

I, like Jurasz, was able to observe simultaneously several cases of this disease in private, as well as in polyclinic practice, which permitted the supposition of an epidemic appearance in the town. I also remember more precisely four house epidemics, which I here briefly report.

1. In June, 1892, I was called to the wife of an official, aged thirty-four years, who complained of pain in the throat, as well as of fever, lasting two days. On examination I found the following state: feebleness, great fever (more than 39 degrees Centigrade), swelling and pain of the lymphatic glands of the neck. On the reddened and swollen palatine tonsils whitish-yellow points, localized in the crypts, were seen. Next day, being much better, the patient was ordered to take oleum Ricini, salol to gargle, and antipyrin ten grains internally. Simultaneously two little daughters (eight and ten years of age) showed symptoms similar to those of the mother (great fever, general weakness, chills—locally in the crypts of the tonsils—whitish-grey points), especially the younger one, whose tonsils were already hypertrophied. Finally, the youngest daughter (six months old), whom the mother suckled, exhibited acute lacunar tonsillitis in a very slight degree. After a couple of days the mother and her daughters recovered.

¹ Schrank (vorschlag betreffend die Arzergepflicht bei Diphtherie ("Allg. Med. Zeit.," 1893, 34) advises the introduction in Vienna of bacteriological examinations, such as have been made obligatory, for one year, in New York.

2. The second epidemic I observed in December, 1892, in the family of P. The servant girl, twenty years old, was the first to be attacked with this disease. The course was pretty severe: great fever, weakness, swelling of the tonsils, with numerous whitish points limited to the crypts (especially in the right tonsil). The little son of the family, aged eight years, was infected by the servant. The course was, however, much milder, the general and local symptoms much less severe. Lastly, the mother nursing the child was attacked with pretty severe acute lacunar tonsillitis of both sides. The epidemic ended favourably in a few days, after application of the usual remedies (salol, etc.).

3. The third epidemic was observed by me in August, 1890. The wife of a captain of the police was taken ill with a pretty severe acute lacunar tonsillitis on both sides—great fever (39°0), affection of the lymphatic glands, etc. At the same time the symptoms of this disease appeared in her husband. The course, however, was somewhat slighter, the left tonsil being especially affected, reddened and swollen, and in the crypts white-greyish spots. There was moderate fever.

Some days after I myself was infected, the symptoms also being very slightly expressed: little fever (38°2), slight weakness, pain when swallowing on the right side. The right tonsil was reddened, swollen, and in the crypts some typical points were observed.

4. The fourth and last epidemic I observed in the household of G. A schoolboy, twelve years old, got suddenly violent chills, fever (to 40°), pain when swallowing. On the strongly reddened and enlarged tonsils a considerable number of whitish-yellow points in the crypts were observed. The lymphatic glands of the neck were enlarged, and painful to touch. There was general weakness. At the same time his brother, sixteen years of age, was attacked with typical and pretty severe acute lacunar tonsillitis, especially on the left side, where the tonsil was enlarged; on the right tonsil, however, of which I extirpated a portion by means of the galvano-cautery snare last year, only some traces of membrane were seen. After some days both had quite recovered under the application of usual treatment.

After finishing this paper I had occasion to observe another (fifth) house epidemic, viz., the family of an apothecary, who was the first to be taken with acute lacunar tonsillitis, on both sides (especially on the right, where in the crypts pretty large membranes were seen); great fever and swelling of lymphatic glands existed. His wife, thirty years old, was then infected. On both sides was observed typical acute lacunar tonsillitis, with great fever, weakness and swelling of lymphatic glands of the neck. On this occasion I was asked to examine the mother of the apothecary (about fifty years old), who had been ill for some days. To their great surprise I discovered in this new patient the same disease: both tonsils were swollen and reddened, in their crypts were numerous white-greyish spots, and great fever existed. Besides these three patients the child—a girl five years old—was also slightly infected. After some days all recovered.

As to the question if the season of the year has any influence on the appearance of this disease, I, similarly to Jurasz, have not been able to

affirm it in my observations. It seems, however, that the spring and autumn—especially late (October, November)—are favourable to this disease. The same opinion is held by Sokolowski and Dmochowski.

Can hypertrophy of the tonsils predispose to acute lacunar tonsillitis? Authors do not quite agree as to the answer to the above question. Some, as Jurasz, maintain that this hypertrophy has no influence on the etiology of the disease. I, however, am of quite another opinion. Comparatively often I have remarked, in patients affected with acute lacunar tonsillitis, more or less considerable hypertrophy of one or both tonsils (36 out of 133 cases).

Further, I have observed more than once the fact that patients with hypertrophy of the tonsils get this disease very often (for instance, in the case of a woman, twenty-five years old, I observed acute lacunar tonsillitis not less than four times during two months).

This predisposition I was able very often to remove effectually by means of operative treatment of the tonsils (tonsillotomy, galvano-caustic snare), although it is not always so successful, as the case reported in the fourth epidemic proves. If I add that very often I only saw, or at least found much more affected the hypertrophied tonsil, I must come to the conviction that hypertrophy of the tonsils furnishes a suitable ground, predisposing the development of the pathological process, known under the term acute lacunar tonsillitis. I must further mention that once (in a boy ten years old) I saw the appearance of this disease a week after the operation for adenoid vegetation.

Further, I observed one case where acute lacunar tonsillitis appeared on the right side a couple of days after acute suppurative inflammation of the right middle ear. As I have already above mentioned, acute lacunar tonsillitis is of absolutely infectious origin, in which almost all authors agree. As to the character of the virus itself, however, opinions still differ. Some authors, amongst whom we must count (Poland) Sokolowski and Dmochowski, do not consider this disease as an independent one, but simply as a mild form of diphtheria, *i.e.*, caused by Klebs-Loeffler's bacilli. The authors, however, base their opinion only on anatomo-pathological researches. On the other hand, the bacteriological investigations performed by B. Fraenkel, Seifert, Gabbi, Ritters, and lastly Goldscheider, the author of the latest paper from the clinic of Prof. Leyden in Berlin (*Bacteriologische Untersuchungen bei angina tonsillaris und Diphtherie*—"Zeit. für Klin. Med.," band 22, heft 4, p. 534) and others absolutely deny any relation between both these pathological processes, so that so-called follicular angina is a disease *sui generis* not dependent upon diphtheritic bacillus, which none of the above authors were able to discover in the secretion of the crypts. I have also made a whole series of bacteriological investigations (cultures, inoculations on guinea-pigs) during 1893-94 in the laboratory of Jesus Child Hospital in Warsaw, upon the nature of acute lacunar tonsillitis. They were published in a special paper, read at the Eleventh International Congress in Rome, 1894.

I shall only say that they almost completely agree with the results of the above authors (B. Fraenkel, Goldscheider, etc.). In not one out of

thirty cases was I able to discover Klebs Loeffler's bacilli, which, as is known (see my paper "Croup oder diphtherie der Nase—" *Monats. für Ohrenheilk.*, 1893), are now commonly regarded as the cause of diphtheria. On the contrary, I always found other micro-organisms not specific of this disease, but having the traits of common pyogenes staphylococci and streptococci (sometimes only the so-called pseudo-diphtheritic bacilli).

As concerns the *pathological anatomy*, it is very well worked out in the extensive paper of the above cited authors (Sokolowski and Dmochowski). These authors found in the specimens, coloured with Weigert's method, especially, very large crypts completely filled with secretion, which was composed of a great number of bacteria, especially small diplococci, as well as of lymphoid corpuscles contained in a fine net of fibrin, the character of which differed a little from that of malignant diphtheria, where the fibrinous net is found in the tissue itself, which becomes necrotic. Here, however, although the one and the other can be observed, yet this process has a very mild course. Necrotic points occur in several places, and only in the superficial layers of the tissue. The epithelium which covers the crypts is generally greatly infiltrated. As to the adenoid tissue, it does not show any particular changes, except infiltration; the same of the follicles (for this reason the definition of follicular tonsillitis, as I have already stated, is wrong). Finally, in one of three observed cases of this disease, these authors found changes characteristic of typical diphtheria (pseudo-membranes, necrosis of superficial larynx). From the above researches the authors express their opinion as to the identity of both these pathological processes, and propose for this disease the definition pseudo-membranous lacunar tonsillitis.

Symptomatology: The disease always commences acutely, generally with chills; afterwards follow more or less considerable fever, general weakness, headache, and dysphagia. In my cases, general symptoms were expressed, sometimes mildly, sometimes severely. The temperature in several cases rose to a high degree (41°C.); in some cases, however, a very quick fall of the temperature followed, so that frequently on the second or third day the patient was without fever. In general, the course of disease is *par excellence* acute; the process lasts very seldom a whole week, or longer. Headaches are frequent and pretty violent; the pain when swallowing, however, is very severe, but lasts always a very short time. In a couple of cases the patients complained of pain radiating to the ears, without changes, however, in these latter. Very often I found in my cases more or less enlarged and painful lymphatic glands of the neck. Jurasz also reports this symptom as very frequent.

As to the local changes of the palatine tonsils, they present themselves in the form of more or less redness of the tonsils.

(To be continued.)

ABSTRACTS.

DIPHTHERIA, &c.

Tiburtius (Berlin). — *Attending upon Diphtheria Patients.* "Zeitsch. für Krank.," 1894, No. 12.

RECOMMENDATION of salicylic irrigations and a spray of menthol and camphor. Mechanical removal of the membranes from the tonsils should only be performed if they are so thick that they cause disturbance of respiration. *Michael.*

Schlossmann (Dresden). — *Diphtheria and the Diphtheria Bacillus.* "Klin. Zeit. und Streitfrage," Wien, 1894.

REVIEW, concluding that the Klebs-Loeffler bacillus is the cause of diphtheria. *Michael.*

Kutscher (Giessen). — *Diphtheria Bacilli in the Lungs of Children dead from Diphtheria.* "Zeitsch. für Hygiene," 1894, No. 1.

CONTENTS indicated by the title. *Michael.*

Esmarch (Königsberg). — *Bacteriological Diagnosis in Diphtheria.* "Deutsche Med. Woch.," 1895, No. 1.

THE author proposes to imitate the method introduced in New York (see this Journal). The membranes should be touched with sterilized sponges, and be sent in paper to the Central Institute. *Michael.*

Washbourn and **Hopwood** (London). — *Cases illustrating the Importance of an Examination for the Diphtheritic Bacillus.* "Brit. Med. Journ.," Jan. 10, 1895.

TWO cases of scarlet fever of the acute stage are related, where at the same time a membrane on the tonsils was found to contain typical diphtheria colonies, a result which proves that another opinion—viz., that the membrane which develops on the tonsils in the early stage of scarlet fever is not diphtheritic—is not without exception true. The bacilli in these cases were found in the post-scarlatinal stages of the disease, and might have given rise to other cases in the ward had they not been recognized. The duration of infection in diphtheria was sixty-three days after disappearance of membrane. *Wm. Robertson.*

Bäumler, **Kraske** and **Schottelius**. — *On the Diagnosis and Treatment of Diphtheria.* Verein Freiburger Aerzte, Meeting, Oct. 30, 1894.

OF twenty-six cases treated by Heilserum, two have died. Bäumler has a very favourable impression of the medicament, and believes that it has a favourable influence on the disease. In two cases he has observed after the injection a second eruption of membranes. In some cases albuminuria and erythema were present.

KRASKE: Of sixteen tracheotomized children, five have died (equivalent to thirty-one per cent.). Without Heilserum, he has had during March a mortality of twenty-five per cent. Erythema and nephritis are sometimes observed, and, as he believes, caused by the treatment.

SCHOTTELIUS showed cultures of diphtheria bacilli.

Michael.

Duffield, G.—*Prophylaxis of Diphtheria*. "Amer. Lancet," Jan., 1895.

THE progress of the epidemic depends upon three things. (1) The number and virulence of the diphtheria bacilli. (2) The pathogenic or non-pathogenic bacteria associated with the diphtheria bacilli, rendering the organism weaker by their disorganizing products. (3) Individual weakness and carelessness. All forms of prophylaxis are fairly and impartially discussed. *R. Lake.*

Schwalbe (Los Angeles, California).—*The Application of Warm Salt Baths in Febrile Diseases, and especially in Diphtheria*. "Deutsche Med. Zeitung," 1895, No. 6.

RECOMMENDATION of this treatment.

Michael.

Heubner (Berlin).—*On Abortive Diphtheria*. "Deutsche Med. Woch.," 1894, No. 50.

REPORT on three cases in which diphtheria complicated other grave general diseases without producing distinct symptoms during life. *Michael.*

Wassermann (Berlin).—*Concentration of Diphtheria Antitoxins of the Milk of Immunized Animals*. "Zeitsch. für Hygiene," 1894, No. 2.

THE author was able to produce diphtheria antitoxins from the milk of immunized animals, and describes in detail his method of production. *Michael.*

Pasteur (London).—*Association of Respiratory Paralysis with Cardio-Pulmonary Symptoms in Diphtheritic Paralysis*. "Brit. Med. Journ.," Feb. 2, 1895.

THE remarks referred to an analysis of thirty-two cases, of which nineteen died. Twenty-six of these were between two and six years of age. In nineteen there were bulbar crises. In five cases in which there was paralysis of the diaphragm for two or three days there was an extreme degree of collapse of lung after death. Where the paralysis had been of short duration or non-existent no collapse occurred. The conclusions arrived at were (1) that the mortality in diphtheritic multiple paralysis was higher than admitted; (2) death took place from asphyxia; (3) the fatal symptoms were mostly of sudden onset and suggested a bulbar origin; (4) recovery from a bulbar crisis was exceptional; (5) paralysis of the diaphragm was frequent and might be due to bulbar crisis or part of the peripheral paralysis; (6) the respiratory paralysis seriously increased the gravity of prognosis; (7) where paralysis of the diaphragm was long-continued, collapse of the lung might occur; (8) base of right lung oftenest affected. Dr. Guthrie did not consider that collapse of the lung depended on paralysis of the diaphragm. This might occur without lung collapse. There was no action of the diaphragm in sleep. The muscles of small bronchi were in part dilators, in part constrictors. Pulmonary collapse was due to paralysis of the former. Diphtheritic paralysis was central in origin. Dr. S. Phillips thought that children affected with paralysis of the diaphragm always died. In one of his cases paralysis occurred as late as nine weeks. Many cases of lung collapse were really cases of spasm or paralysis of bronchial tubes.

Wm. Robertson.

Escherich (Graz).—*Etiology and Pathology of Epidemic Diphtheria*. Wien: Holder. 1894. Pp. 294.

REVIEW.

Michael.

Seitz (München).—*The Progress of our Knowledge as to the Nature, Causes, and Treatment of Diphtheria in the last Decennium*. "Münchener Med. Woch.," 1884, No. 50.

REVIEW.

Michael.

Benesch.—*Pilocarpin Injections in Diphtheria.* "Allg. Wiener Med. Zeitung," 1895, No. 4.

THE author has treated thirty-two cases, which have all been cured. He prefers this method to Heilserum treatment, because the good effect is manifested in a few minutes in decrease of the temperature, and the general results are very satisfactory.

Michael.

Hamilton, Prof. (Aberdeen).—*A Ready Means of Procuring and Transmitting Diphtheritic Discharges for Examination.* "Brit. Med. Journ.," Feb. 9, 1895.

THIS consists of a test tube, to which is adapted a camel-hair brush. The handle of the brush penetrates the tight wad of cotton wool used to close the tube. The whole is sterilized and all the practitioner has to do is to lift up the discharge from the tonsil with the brush, reinsert this and post the box containing the test tube. In this way the discharge is removed by and received in sterilized instruments; 2, the brush is an excellent means for collecting the discharge and does not frighten the patient by its appearance; 3, everything being ready for sending off by post, no time is lost in transmission; 4, the brush is again an excellent instrument for spreading the discharge; and 5, the cost of the apparatus is trifling.

Wm. Robertson.

Sevestre and Méry.—*Persistence of Loeffler's Bacillus in Children cured of Diphtheria.* "Bull. Soc. Méd. des Hôp., Paris," Feb. 8, 1895.

THE authors have studied, from a prophylactic standpoint, the persistence of Loeffler's bacillus in children cured of diphtheria. Bacteriological examination has been practised since the first day of entrance into the hospital, and treatment until some weeks after complete cure of the disease. Not only was frequent bacteriological examination made, but, in order to determine the virulence of the bacillus at the same time, the cultures were inoculated in guinea-pigs.

The researches have been extended to two series of cases, the first treated by ordinary means, carbolic washes, painting the throat with Gaucher's solution or steresol; the second treated by Roux's serum alone, with simple chloride washes. In the first series the diphtheritic bacillus had disappeared with the pseudo-membranes in half of the patients; in the others they found the bacillus more or less late in the throat, and specially in the nose.

In the second series the results are similar. The bacillus was absent (after disappearance of pseudo-membranes) in three cases; was present some days, but less virulent, in four cases; was present and virulent after some days in three cases.

From these results the authors conclude that it is dangerous to permit the discharge of the patient for some weeks. The contagiousness is lasting, and the children supposed to be cured can spread the disease in families and in schools. It is desirable to have some convalescent hospitals or wards for reception of patients until the moment of complete cure—that is to say, the proof of absence of bacilli in the mucous membranes of the throat and nose.

A. Cartaz.

Muehlech, G. A.—*Four Cases of Diphtheria treated by Antitoxin.* "Amer. Lancet," Jan., 1895.

ONE death is recorded to three recoveries.

R. Lake.

Lebreton et Magdelaine.—*Three Months of Serum Treatment and Intubation in the Children's Hospital.* "Bull. Soc. Méd. des Hôpitaux," Feb. 7, 1895.

TWO hundred and fifty-eight cases of true diphtheria have been treated during the last three months by serum treatment alone, with simple washings of chloride

water (liqueur de Labarraque) fifty cubic centimètres per thousand. These cases have given thirty-one deaths, of which eight occurred during the first day of entrance into the hospital. Tracheotomy has been necessary twenty-four times, with nine deaths. Fifty-one intubations have been performed, with fourteen deaths. In one hundred and forty-seven cases the diphtheritic bacillus was associated with other microbes and accounted for nineteen of the deaths. The authors relate the same accidents as Roux and Moizard, viz., exanthema and urticaria, and insist on the various phases and complications of intubation.

A. Cartaz.

Perregaux, G.—*Study of 249 Cases of Diphtheria treated by Anti-Diphtheritic Serum.* Thèse de Paris, 1895.

THESE statistics are the reproduction, with some numbers differing, of the statistics of Moizard and Perregaux published in "Bull. Soc. Méd. des Hôp." in December, 1894. Out of 249 cases (with 37 deaths) the author distinguishes 46 true diphtheritic anginas with 2 deaths; 45 associated anginas with 6 deaths; 102 pure diphtheritic laryngitis with 19 deaths; 56 associated diphtheritic laryngitis with 10 deaths. In 39 cases tracheotomy was necessary, and there were 14 deaths; 18 times intubation was practised, 6 times with secondary tracheotomy, with 7 deaths.

The author relates an unusual number of complications of serum treatment; 61 cases of exanthema; 21 of rheumatismal pains or arthritis; 17 cases of soft palate paralysis; but these complications have been, for the most part, noted by the children's parents and not examined by the author. One case is interesting: in a little girl, four years of age, the injection of serum determined severe and repeated attacks of urticaria, with vomitings, oliguria, and collapse. During that period the pseudo-membranes persisted in the throat, but without bacillus. Cure was obtained after some weeks.

A. Cartaz.

Variot.—*Changes in the Temperature and Circulation of the Injections of Anti-Diphtheritic Serum.* "Bull. Soc. Méd. des Hôp.," Mar. 1895.

THE author noted in children treated by the antitoxic serum an increase of temperature (one or two degrees Centigrade) after the injection of twenty cubic centimètres. The antitoxin serum must have an hyperthermic power. It also increases the pulsations of the heart, causing a more rapid circulation, with sometimes cardiac asthenia and pulse arrhythmia. This febrile reaction should be favourable to the cure of the disease. Rendu, in three cases of adults, has not observed any increase of temperature in spite of repeated injections.

A. Cartaz.

Sinson, H.—*Epidemic of Diphtheria in a village; Treatment by Antitoxic Serum.* "La Méd. Moderne," Feb. 6, 1895.

IN the village of Pecy, with seven hundred inhabitants, the author has noted a serious epidemic of diphtheria. During one month eighteen children have been affected, and in many cases the form was severe (angina and laryngitis, with diphtheritic bacillus and association of streptococcus and staphylococcus). Two cases were treated by ordinary methods, with one death; sixteen by serum (Roux's serum), with fourteen cures and two deaths. One of the fatal cases had been injected with serum only during the last stage, being then moribund. The author claims the superiority of the serum treatment over other methods.

A. Cartaz.

Dreyfus, J.—*Serum Treatment at Lyons.* "Lyon Médical," Feb. 3, 1895.

STATISTICS of the cases treated in the children's service from October 15th, 1894, to January 21st, 1895. Seventy-eight cases of diphtheria have been treated by Behring's or Roux's serum. Fifteen deaths have occurred—three from pneumonia,

diarrhoea, and typhoid fever. In thirty-one cases intubation had been necessary and was successful. *A. Cartaz.*

Chabry.—*Diphtheria in an Adult cured by Sero-therapy.* "Journ. de Clin. et Thérap. Infantiles," Feb. 21, 1895.

THE author was infected in the diphtheritic children's wards, where he was resident physician. He narrates his own case. Two injections of serum produced rapid cure. Intense erythema and arthritic pains appeared some days after the injection. *A. Cartaz.*

Sevestre and Meslay.—*Report of 179 Cases of Diphtheria treated by Sero-therapy.* "Bull. Soc. Méd. des Hôp.," Mar. 1, 1895.

IN the month of December, the authors treated 179 cases; 29 of pseudo-membranous angina. The 150 cases of diphtheria are divided into—

1. Pure diphtheritic anginas : 29 cases, 1 death.
2. Diphtheritic anginas with association of microbes : 24 cases, 3 deaths.
3. Anginas with laryngitis, diphtheria pure : 54 cases, 4 deaths.
4. Anginas with laryngitis, microbic association : 21 cases, 5 deaths.
5. Laryngitis without anginas, diphtheria pure : 13 cases, 2 deaths.
6. Laryngitis without association of anginas : 9 cases, no deaths.

In 18 cases tracheotomy has been necessary; intubation in 9. It is an excellent review of the method of cure, and of the phases of the disease and its complications. *A. Cartaz.*

Soltmann (Leipzig). — *Serum Treatment of Diphtheria.* "Deutsche Med. Woch.," 1895, No. 4.

OF one hundred and ninety-three cases treated in 1894, fifty (equivalent to twenty-seven per cent.) died; of seventy-one cases treated without serum, twenty-eight (equivalent to 39·8 per cent.) died; of one hundred and twenty-two treated with serum, twenty-two (equivalent to eighteen per cent.) died. As the epidemic became more malignant the mortality ascended, also in those cases treated by serum (to 35·9 per cent.). Local effects were not observed, and only in a few cases acute defervescence. Of twenty-six cases of albuminuria, nineteen followed the injection directly. In three cases recurrences were observed.

Michael.

Taube (Leipzig).—*On Serum-Therapy.* "Deutsche Med. Woch.," 1895, No. 4.

THE serum treatment should be combined with local treatment, especially with the application of pyoktanin. *Michael.*

Kassowitz.—*Discussion on Heilserum Treatment.* Gesellschaft der Aerzte in Wien Meeting, Jan. 18, 1895.

THE experiments on animals cannot be regarded as cures, because without disease there can be no cure. Further, successful experiments on animals cannot prove anything for human diphtheria, either as to its cure or immunity. The good effects observed with the treatment have also been observed without the treatment. Tachycardia, progression of the local symptoms, and other complications, are also observed in serum treatment. As the supporters of this treatment also concede that it can do nothing against the streptococcal invasion, it must in every such case be combined with local treatment. The decrease of mortality does not prove anything because of a larger proportion of slight cases. *Michael.*

Horciska (Pola).—*Contribution to the Treatment of Diphtheria by Heilserum.*
"Wiener Klin. Woch.," 1894, No. 49.

THREE cases treated with good results.

Michael.

Eiermann (Frankfurt-a-M.).—*Description of the Apparatus for Fabrication of Heilserum in "Höchster farbwirken."* "Münchener Med. Woch.," 1894, No. 51.

PANEGYRIC.

Michael.

Blumenfeld (Leitha).—*Experiences on Heilserum Treatment in Diphtheria.*
"Wiener Klin. Woch.," 1895, No. 3.

IN most of the cases a good result has been observed as to the progress of the disease. The day after the injection the cases were improved. Complications and after-effects have not been observed. Of fifty cases treated with Heilserum, two (equivalent) to four per cent.) have died; of fifty treated without Heilserum, nineteen (equivalent to thirty-one per cent.) have been fatal. The author recommends this treatment.

Michael.

Ranke (München).—*Further Experiences with Diphtheria Heilserum.*
"Münchener Med. Woch.," 1895, No. 8.

OF eighty-five cases of diphtheria treated with Heilserum 18·8 per cent. have died. In most of those microscopically examined Loeffler's bacilli were found. The minimum of mortality during the last eight years was forty-two per cent. In thirty-one cases of laryngeal stenosis the disease disappeared after the injection; in previous years it disappeared only in five per cent. of the cases. In no case treated by Heilserum did there develop any laryngeal stenosis if it had not already existed before the commencement of the treatment. There is also a great difference as regards intubation. In non-injected cases the tube could be removed the first day only in eight per cent.; in injected cases in eighteen per cent.; after two days in forty-two—i.e., twenty-six per cent.; after more than four days, thirty-six—i.e., three per cent. These statistics are more favourable than they have ever been before. Exanthemata and joint diseases are sometimes observed, but not in any proportion to the good effects. The causes of death in injected cases were three from paralysis cordis, ten from descending croup, one from lymphadenitis, and one from sepsis.

Michael.

Sonnenburg (Berlin).—*Further Results of the Effects Behring's Heilserum in Diphtheria.* "Deutsche Med. Woch.," 1894, No. 50.

OF one hundred and seven children treated by serum, eighty-five (equivalent to 79·4 per cent.) have been cured; of these, thirty-four were tracheotomized, with twenty-six (equivalent to 76·5 per cent.) cures. Without serum, there have been treated one hundred and sixteen children, with eighty-four (equivalent to 72·4 per cent.) cures; of these, forty-seven were tracheotomized, with twenty-nine (equivalent to sixty-two per cent.) cures. Of sixteen prophylactically vaccinated children, two have been affected with diphtheria.

Michael.

Behring (Halle-a-S.).—*Rectification.*

Bergmann (Berlin).—*Answer.* "Deutsche Med. Woch.," 1894, No. 50.

POLEMICAL notices concerning Bergmann's paper on diphtheria treatment by Heilserum.

Michael.

Benario (Frankfurt-a-Main).—*The Fabrication of Serum in the "Höchster Farbwirken."* "Deutsche Med. Woch.," 1895, No. 1.

DESCRIPTION of the institutions in the factory.

Michael.

Habel (Troppau).—*Short Communication on a Case of Toxic Effect of Diphtheria Heilserum.* "Deutsche Med. Woch.," 1895, No. 1.

A CHILD, eleven years old, with diphtheria was treated with good effect by Heilserum. Eight days later, swelling of the connective tissue of the head, arms, legs, and neck occurred, with pains in the joints and eruption of an exanthem. No increase of temperature and no albuminuria were observed. Cure resulted some days later. *Michael.*

Seiz (Constanzt).—*Serum-therapy in Diphtheria.* "Therap. Monats.," 1894, No. 12.

THE author has treated twenty-seven cases, with one case of death. He concludes that the medicament has a favourable influence on the disease; the effect arises thirty-six hours after the injection; the local process is improved by it; complications are rare; the medicament has no toxic effects; Behring's and Aronsohn's preparations are of equal value. Contrary to most authors, who contend that the treatment should first be applied in the clinics alone, the author demands that every practitioner shall use it, and that judgment as to the value of Heilserum depends on the results obtained by practical physicians. *Michael.*

Hagenbach (Basel).—*Treatment with Diphtheria Serum.* "Correspbl. Schweizer Aerzte," 1895, No. 1.

IN his first experiments the author had only favourable results. Now he has observed a case where there was a bad effect. In a child with diphtheria gravis, treated by serum, petechiæ arose over the whole skin and mucous membrane of the mouth and pharynx. The membranes disappeared in a comparatively short time, characteristic of the effect of the serum. Then occurred profuse vomiting and death. The *post-mortem* examination showed petechiæ of the skin and of the endocardium, fatty degeneration of the heart, hæmorrhagic gastro-enteritis, diphtheritic pharyngeal ulcers, and parenchymatous nephritis. The author believes that the petechiæ and the fatal gastro-enteritis were caused by the serum treatment. *Michael.*

Sahli.—*Heilserum Treatment.* Medizin-Pharmaceutischer Bezirksverein in Bern. Meeting, Nov. 13, 1894.

THE author reported upon the results up to now obtained with Heilserum in France and Germany, and recommended the application also in Switzerland. He also recommended the establishment of a branch of the manufactory of Höchst. In the discussion most members agreed with the propositions. *Michael.*

Heller (München).—*Serum Treatment and Pharyngo-therapy.* "Münchener Med. Woch.," 1894, No. 52.

THE author believes that up to now the serum treatment has given no better results than other methods. He recommends local irrigations. (See the report of his first paper in the last number of this Journal.) *Michael.*

Hoyntschak.—*Injection of Behring's Heilserum in Diphtheria, and its Consequences.* "Wiener Klin. Woch.," 1895, No. 4.

A CHILD, ten years old, suffering from diphtheria and treated with Heilserum, had urticaria and an affection of the joints similar to polyarthritis rheumatica. Cure resulted. *Michael.*

Ehrlich and Wassermann (Berlin).—*On the Production of Diphtheria Antitoxins of Blood-Serum and Milk of Immunized Animals.* "Zeitsch. für Hygiene," 1894, No. 2.

Ehrlich and Kossel (Berlin). — *On Application of Diphtheria Antitoxins.* "Zeitsch. für Hygiene," 1894, No. 3.

SEE the reports in this Journal on the papers in the "Deutsche Med. Woch.," 1894, No. 20. Michael.

Lange (Halle-a-S.).—*Case of Diphtheria with Laryngeal Stenosis cured by Application of Heilserum.* "Deutsche Med. Woch.," 1895, No. 7.

A CHILD with laryngeal stenosis was not tracheotomized, but injected with serum. Next day a great deal of membrane was coughed out, with great relief to the patient. Cure resulted. Michael.

Richter (Marienberg). — *Epidemic of Diphtheria; Heilserum Treatment.* "Deutsche Med. Woch.," 1895, No. 7.

OF thirty-one children in Mielenz six have died; of nineteen in Weinersdorf Schönen one only has died. Six of these children were treated with serum and cured. Of sixty-two children prophylactically vaccinated seven contracted diphtheria. Michael.

Schwalbe (Berlin).—*Acute Hemorrhagic Nephritis following Diphtheria (without Heilserum Treatment).* "Deutsche Med. Woch.," 1894, No. 51.

DESCRIPTION of a case in which nephritis followed diphtheria. The author proves that inflammation of the kidneys is sometimes combined with diphtheria, and that the Heilserum treatment cannot, therefore, be accused as being the cause of it.

Michael.

Wolf-Lewin (Berlin).—*On a Case of Recurrence of Diphtheria after Treatment with Heilserum.* "Deutsche Med. Woch.," 1894, No. 52.

A PATIENT, ten years old, whose sister was suffering from diphtheria, was vaccinated with Heilserum for immunization. Five weeks later the child contracted diphtheria and was treated with Heilserum. Some days later occurred eruption of an erythema, and ten days later there was recurrence of the diphtheria, with Loeffler's bacilli, and followed by a second erythema. Michael.

Kann (Trebsen).—*Contribution to the Treatment of Diphtheria with Heilserum.* "Deutsche Med. Woch.," 1894, No. 52.

OF two cases one has died. The author is satisfied with his results. Michael.

Hausemann (Berlin).—*Diphtheria.* "Deutsche Med. Woch.," 1894, No. 52.

Heubner (Berlin).—Answer to the preceding article. "Deutsche Med. Woch.," 1894, No. 52.

POLEMICAL articles. Michael.

Widerhofer. — *Treatment of Diphtheria by Heilserum.* Königliche Gesellschaft der Aerzte in Wien. Meeting, Dec. 21, 1894. ‡

OF one hundred cases twenty-four per cent. have died. The mortality during the last year was fifty-two per cent. The author has remarked that a yellowish membrane becomes white one or two days after the injection. Paralysis, nephritides, and erythema have in some cases been observed. The author recommends the treatment. Michael.

Bachmann (Salzhemmendorf).—*Two Cases of Heilserum Treatment in Diphtheria.* "Deutsche Med. Woch.," 1894, No. 51.

THE first case was cured. In the second the disease descended to the larynx. Crico-tracheotomy was followed by death. *Michael.*

Behring (Halle-a-S.).—*Remarks on the Answer of Dr. Von Bergmann in No. 50 of the "Deutsche Med. Woch."* "Deutsche Med. Woch.," 1894, No. 51.

POLEMICAL article. *Michael.*

Rembold (Saulgan).—*Two Cases of Disorders following the Application of Diphtheria Heilserum. Post-Diphtheritic Paralysis of accommodation in spite of favourable influence on the General Health.* "Deutsche Med. Woch.," 1894, No. 51.

(1) A CHILD, seven years old, affected with diphtheria, and treated by Heilserum with good result, presented eight days later a red exanthem on the legs, and pains in the joints. Later on, paresis of accommodation occurred. (2) A patient, eleven years old, with diphtheria, and treated by Heilserum, some days afterwards had scarlatinous exanthema and pains in the joints and muscles. Cure resulted.

Michael.

Pullmann (Offenbach).—*On Serum Treatment.* "Deutsche Med. Zeitung," 1894, No. 99.

THE author has used this treatment in some cases with satisfactory results.

Michael.

Gordon.—*Diphtheria Heilserum in French Hospitals.* "Deutsche Med. Woch.," 1895, No. 3.

REVIEW of the French papers upon this subject.

Michael.

Kossel (Berlin).—*Further Researches on the Results of Behring's Heilserum.* "Deutsche Med. Woch.," 1894, No. 51.

CRITICAL remarks concerning diverse publications and answer to the remarks of Gottstein and Schleich (see the report) concerning the author's statistics, with the conclusion that it cannot be expected that every case of diphtheria will be cured by Heilserum, but it is possible in commencing cases of uncomplicated diphtheria to obtain cure with certainty by the application of a sufficient dose of Heilserum. In later stages of the disease also the results of Heilserum treatment will be better than those of other treatments.

Michael.

Creptner and Schnabel (Reichenberg).—*Contribution to the Serum Treatment of Diphtheria.* "Münchener Med. Woch.," 1895, No. 1.

RELATION of one case treated with good results.

Michael.

Eulenberg and Schwalbe (Berlin).—*Invitation to aid Collective Investigation of Serum Treatment in Diphtheria.* "Deutsche Med. Woch.," 1895, No. 1.

THE authors hope to elucidate the question by this means, and will send question cards to every German physician.

Michael.

Treyman (Frankfurt-a-M.).—*Case of Hemorrhagic Nephritis following Behring's Heilserum Treatment.* "Deutsche Med. Woch.," 1894, No. 51.

A PATIENT, three years old, with diphtheria of medium gravity, and treated with strong doses of Heilserum, was cured very slowly. Fourteen days later a new membrane arose. New injections of Heilserum were given. The next day high

fever appeared (40°0), and the eruption of an exanthem similar to measles. Very much albumen appeared with cedema, and the following day anuria. Later on cure followed, but some time afterwards paralysis of the soft palate and anæmia were observed.

Michael.

Goebel (Hamburg). — *Diphtheria Recurrences in Treatment with Behring's Heilserum*. "Deutsche Med. Woch.," 1895, No. 2.

UP to the present three cases of recurrence of diphtheria following treatment with Heilserum have been described. The author adds two new cases. (1) A patient, two years of age, suffering from laryngeal diphtheria. Injection of one thousand five hundred immunity units of Behring's serum; tracheotomy. Improvement during the next few days. Twelve days later, removal of the canula. Four weeks later, recurrence of diphtheria of the pharynx and larynx. New treatment with Heilserum. Cure. From both attacks virulent cultures could be made. (2) A child, seven years old, with diphtheria was treated with one thousand immunity units of Behring's Heilserum. Next day tracheotomy became necessary. Five days later the canula could be removed. Thirty days later a second diphtheria treatment became necessary with Heilserum. Cure resulted.

Michael.

Cugrun (Frankfurt-a-M.). — *Two Cases of Toxic Effects of Heilserum*. "Deutsche Med. Woch.," 1894, No. 48.

THE author's assistant, Dr. Gallus, was attacked with membranous diphtheria, proved by bacteriological examination. Injection of Heilserum No. 2 was made; temperature 39° C. Two days later the symptoms had disappeared. Five days later an urticaria arose over the place of injection, combined with swollen lymphoid glands, rheumatoid pains, and fever. Convalescence was slow. The patient will be unable to work for a long time. The same day the other assistant, Dr. Korte, presented an angina. Believing the cause to be the same as in the previous case, the same injection of Heilserum was made. The angina and its symptoms disappeared next day. Five days later the same symptoms as in the other case (urticaria, rheumatoid and nervous pains, enlarged glands, fever, and adynamia) arose. There were also paræsthesia and pains in both hands. Loss of weight amounted to two and a half kilogrammes. Convalescence slow, and difficulty in the use of the arms for a long time. The preparation was of Höchst, and injections were made with strict antiseptic precautions.

Michael.

Abel (Greifswald). — *Immunizing Power of Blood-Serum of Diphtheria Convalescents and Healthy Individuals against Lethal Doses of Diphtheria Bacillus Cultures and Diphtheria Bacillary Poison in Guinea-Pigs*. "Deutsche Med. Woch.," Nos. 48 and 50.

THE author concludes that the blood-serum of many healthy persons, between the twentieth and fortieth years of their age, and who have never had diphtheria, has the power to immunize guinea-pigs against diphtheria. The blood-serum of diphtheria convalescents has no immunizing power during the first days of the disease (before disappearance of the membranes). Between the eighth and the eleventh days the immunizing power is nearly always found. Some months after the cure of the disease the immunizing power disappears in most persons. This difference between the different instances is not yet explained.

Michael.

Heckel (Triesdorf). — *Peptonuria following Serum Treatment in Diphtheria*. "Münchener Med. Woch.," 1895, No. 8.

THE author has used the Heilserum treatment in six cases. In only one of them was the application prophylactic. Of the five cases of diphtheria one has died. In

all cases the author found peptone in the urine. He believes that this is an excretion of fibrinous masses which are contained in the serum. *Michael.*

Felsenthal.—*On Diphtheritic Paralysis.* "Kinderarzt," 1895, No. 2.

REVIEW.

Michael.

Neudorfer (Wien).—*Behring's Heilserum and Peroxide of Hydrogen.* "Wiener Med. Woch.," 1895, Nos. 2 and 6.

THE author has found that peroxide of hydrogen can cure diphtheria in most cases. He does not believe that it is a specific medicament, but it owes its effect to destruction of the bacilli, and by producing the excretion of the toxic matters by the kidneys. He believes that by using blood-serum mixed with peroxide of hydrogen the same results can be obtained as by Heilserum alone. *Michael.*

Pavlik (Waag-Neustadt). *On Heilserum.* "Wiener Med. Presse," 1895, No. 5.

OF seven children who had been prophylactically inoculated three have been affected with diphtheria during the next twelve to thirty days. In seven cases of diphtheria treated by Heilserum he has obtained cures. *Michael.*

Kuh, E. J.—*Some Additional Experience with Behring's Antitoxin, and Remarks on Loeffler's Toluol Solution.* "Med. News," Jan. 26, 1895.

A PREVIOUSLY published unsuccessful case is first reproduced, followed by a detailed description of five cases all cured; four were treated with antitoxin and local application of toluol, and one with toluol only. The author draws attention to the greyish tenacious deposits caused by toluol. To toluol also he ascribes the power of aborting follicular tonsillitis, and praises it in pseudo-diphtheria of scarlet fever. *R. Lake.*

Williams, F. H.—*A few Cases of Diphtheria treated with Antitoxin.* "Boston Med. and Surg. Journ.," Dec. 20, 1894.

SELECTED cases from about twenty. One case is of interest, as the bacilli were found on the tenth day, nine days after a fifteen cubic centimetre injection of Behring's No. 3 solution, and in another they were found six days after injection by Aronsohn's; in these cases no local treatment was adopted. When the bacilli disappeared quickly, local treatment by hydrogen peroxide had been used. *R. Lake.*

Colla (Wriezen).—*Case of Serum Exanthem.* "Deutsche Med. Woch.," 1895, No. 3.

A LADY, twenty-two years old, was treated by Heilserum with good result. Five days after the first injection an exanthem arose, similar to scarlet fever, combined with pains in all the joints, but without any rise of temperature. The exanthem disappeared eight days later. *Michael.*

Bachmann (Salzhemmendorf). — *Treatment of Diphtheria with Heilserum.* (Second communication.) "Deutsche Med. Woch.," 1895, No. 3.

THE author has since his first publication treated four other cases of diphtheria with good result. *Michael.*

Widerhofer (Wien). — *On One Hundred Cases of Diphtheria treated with Heilserum.* "Deutsche Med. Woch.," 1895, No. 2.

SEE the report on the meeting of the Gesellschaft der Aerzte in Wien, December 21st, 1894. *Michael.*

Schmidt (Erdmannsdorf).—*Contribution to the Therapeutic and Prophylactic Value of Behring's Antitoxin.* "Deutsche Med. Woch.," 1894, No. 52.

OF forty-one cases treated in eight weeks four have died; of twenty-seven cases without treatment with Heilserum one has died; of fourteen injected cases three have died. Twelve children prophylactically vaccinated did not contract diphtheria. The author is satisfied with his results. *Michael.*

Klipstein (Mainz).—*Disorders following the Application of Heilserum.* "Deutsche Med. Woch.," 1894, No. 52.

A CHILD, three years old, affected with diphtheria was treated by Heilserum. Twelve hours later, increase of fever, urticaria, exanthem and pains in the joints; next day, bronchitis. Cure after several days. The author does not doubt that the symptoms were caused by Heilserum. *Michael.*

Ferran (Barcelona).—*Priority of Diphtheria Immunization in Animals.* "Deutsche Med. Woch.," 1894, No. 52.

THE author has sent to A. Fraenkel a paper printed in 1890, containing the result of experiments on immunization. A. Fraenkel concedes the priority. Babes (Buda-Pest) published in 1889 and 1890 the opinion that the blood of immunized animals can produce immunity in other animals. *Michael.*

Kersch (Wien).—*Croup and Diphtheria Treatment without Local Pharyngeal Treatment.* "Wiener Klin. Woch.," 1894, No. 51.

RECOMMENDATION of iodide of potassium and salicylic acid. *Michael.*

Joire—*New Treatment of Whooping-Cough.* "Bull. Méd. du Nord," XXXIV., 4, Feb., 1895.]

THE author has successfully treated many cases of whooping-cough by wrapping the young patient every day for one hour in a sheet soaked in a decoction of flowers of rye-grass, and administering evening and morning six or ten drops of fennel oil on sugar. *A Cartaz.*

Sonnenberger (Worms).—*Some Remarks on the Paper of Dr. Rehn in No. 46 of the "Münchener Med. Woch."* *Prussiate of Antipyrin in Whooping-Cough.* "Münchener Med. Woch.," 1894, No. 52.

THE results of prussiate of antipyrin do not differ in anywise from those obtained by use of pure antipyrin. *Michael.*

Hulke, J. Whittaker (London).—*Five Cases of Cancer treated with Cinnamon.* "Lancet," Sept. 15, 1894.

THE glowing accounts recently published of beneficial results in otherwise hopeless cases of cancer from the daily consumption of half a pint of a decoction of cinnamon (made by boiling a pound of sticks of Ceylon cinnamon in three pints of water till reduced to one pint) by Dr. Carne Ross occasioned the trying of the remedy in five cases of various forms of cancer under Mr. Hulke's care at the Middlesex Hospital. The results were wholly negative, and morphia, which was interrupted, had to be resumed. The cinnamon became intolerable to the patients. [It would be interesting to observe whether the effect was equally unsatisfactory in patients who had not yet tasted morphia.—REP.] *Dundas Grant.*

MOUTH, PHARYNX, &c.

Eudlitz.—*Syphilitic Chancre of the Lip and Tongue.* Soc. Française de Dermat., Feb. 14, 1895.

THE case is interesting from the number of simultaneous primary chancres, three on the inferior lip, a fourth on the left side and the tip of the tongue, in a young woman, twenty-one years old.

A. Cartaz.

Föderl (Wien).—*Case of Congenital Ranula Glandulæ Nuhnii.* "Langenbeck's Archiv," Band 49, Heft 3.

THE author describes a tumour situated on the frenum of the tongue. The tumour was congenital, was observed in a boy otherwise normal, and was situated between the lips. It was transparent and fluctuating. Excision of a piece of the wall caused discharge of viscid fluid. The child was cured, but a fistula remained. A carefully made microscopical examination proved that it was a ranula of Nuhn's gland.

Michael.

Schiff (Wien).—*On Leukoplakia Buccalis.* "Wiener Klin. Rundschau," 1895, No. 8.

REVIEW.

Michael.

Galisch (Berlin).—*Struma Accessoria Baseos Linguae.* "Deutsche Zeitsch. für Chir.," Band 39, Heft 5 and 6.

UP to the present only two cases are known, one described and operated upon by Wolf in Hamburg; the second accidentally found at the *post-mortem* examination of an old woman. The author adds a third case: a girl, twenty-four years old, had a tumour between the lower jaw and the hyoid bone, which was extirpated. The microscopical examination showed it to be of strumous tissue. Three weeks later the patient suddenly had cough and expectoration of a quarter of a litre of blood. The hæmorrhage recurred, and the patient declared she had a foreign body in the throat. The hæmorrhages were unaccompanied with cough and vomiting. Fourteen days later a laryngoscopical examination could be performed, and showed a semi-globular tumour situated on the base of the tongue, beginning in the papillæ circumvallatæ and reaching to the epiglottis. Puncture, which was followed by a new hæmorrhage, proved its very vascular nature. Prophylactic tracheotomy was done, followed by extirpation of the tumour (details must be seen in the original). Cure resulted. The examination of the tumour showed that it was two and a half centimètres broad, three centimètres long, two and a half centimètres high, and consisted of thyroid tissue. Up to now, six years after the operation, the patient has been quite well, with normal respiration and voice.

Michael.

Heymann (Kolmar). — *Stuttering—Psychoglossia.* "Deutsche Med. Zeitung," 1894, No. 100.

THE author regards stuttering as an hysterical affection, and proposes to call it psychoglossia.

Michael.

Sternfeld (München).—*Hyperplasia of the Lingual Tonsil.* "Aerzte Rundschau," 1895, No. 5.

REVIEW.

Michael.

Foster, Hal.—*Report of a Case of Bifid Uvula.* “Western Med. Journ.”

THE uvula was cleft up to its junction with the palate. Patient had slight difficulty in deglutition. R. Lake.

Moure.—*Notes on Granular Pharyngitis.* “Bull. Méd.,” Feb. 20, 1895.

MOST of the cases formerly described as granular pharyngitis result from nasal or naso-pharyngeal diseases. This granular, glandular state of the pharyngeal mucous membrane is not properly a disease, but a pathological condition derived from other origin. Yet in some cases these *granulations* are really apparent, and exist without nasal catarrh. Sometimes they cause numerous, but never serious, disorders. The author describes granular pharyngitis, isolated granulation, lateral pharyngitis, inflammation of the band of adenoid follicles on the margin of the pillars, another form at the root of the tongue and the inferior part of the pillars, and gives a description of the principal symptoms and their treatment. A. Cartaz.

Mendel.—*Granular Angina.* “La Méd. Moderne,” Feb. 27, 1895.

CRITICAL review; nothing new.

A. Cartaz.

Semon (London).—*The Sensory Throat Neuroses of the Climacteric Period.* “Brit. Med. Journ.,” Jan. 3, 1895.

THIS paper deals with the sensory throat neuroses of the menopause. The author, *en passant*, refers to the connection that exists between the sexual apparatus and the respiratory organs both in man and animals, and also instances conditions, such as vicarious bleeding from the upper air passages (epistaxes, etc.) which, although on the border-line between health and disease, yet illustrate the connection. Such conditions, not having been accorded any distinctive place in medical, gynæcological and laryngological text-books, demand a reference. The term “throat” neuroses is used in its widest acceptation, thus including laryngeal and pharyngeal, from the fact that the power of localization of sensations felt in the throat is very defective, physiologically as well as pathologically. The author bases his results on clinical findings alone, and first from observing them in the patients entering upon or in the midst of the climacteric period; secondly, that in the majority of those thus circumstanced there was a total absence of local or general signs known to cause or accompany sensory neuroses of the throat; thirdly, that the ordinary treatment applied to such neuroses otherwise caused here failed; and finally, that when the organism settled down to the new conditions these neuroses disappeared spontaneously. The symptoms which set in, in patients in or about the “change of life,” *i.e.*, between thirty-five and fifty-five, vary enormously in kind and intensity, but can be summarized under the two large headings of paræsthesia and neuralgia, the former the more frequent. Anæsthesia and motor neuroses have not been observed. The sensations experienced were described variously (irritation, burning, choking, strangulation, etc.). Such are the paræsthetic sensations felt. The “neuralgic” sensations, less frequent, are described as fixed pain on one side of the throat. Such sensations in certain cases lead up to cancrophobia. These symptoms are often the *only* sign of the approaching menopause or may precede this. The objective symptoms are slight; for the most part, appearances are normal; prognosis good. In attempting a diagnosis due care must be exercised to eliminate definite local lesions. The author animadverts against trifling conditions, *e.g.*, granulations or slight varix in the pharynx, being looked upon as an explanation of the neurosis. When other causes can be eliminated and a deliberate opinion can be given that the sensations are due to the change of life, moral influence is to be relied upon principally.

Wm. Robertson.

Mermet, P.—*Bucco-Pharyngeal Syphilides and Retro-Pharyngeal Abscess.* "Gaz. des Hôp.," Mar. 12, 1895.

A YOUNG man, seventeen years of age, with secondary manifestations of syphilis in the mouth and pharynx, angina, pharyngitis, two months after the primary chancre. Some days after the symptoms of pharyngitis became more severe, with cervical adenopathy, fever, and signs of suppuration. There was found a large retro-pharyngeal abscess pointing in the pharynx, which was largely opened, after anæsthesia, by an incision behind the sterno-mastoid. Rapid cure resulted.

The author reviews the rare cases of retro-pharyngeal abscess, from syphilitic origin, Méandre-Dassit, Gillette, Verneuil, Fournier; he believes the external operation to be preferable to internal. Lisfranc was the first to indicate that method of opening (1849). Watson Cheyne also prefers this incision (1881).

A. Cartaz.

Garel.—*Syphilitic Stenosis of the Pharynx.* "Lyon Médical," Feb. 3, 1895.

A YOUNG man, twenty-two years old, presented naso-pharyngeal stenosis and secondary stenosis of the inferior part of the pharynx at the root of the tongue. There was complete adhesion of the soft palate to the posterior wall of the pharynx, with a small opening in the median part at the level of the uvula. The opening of the inferior stenosis was reduced to four or five millimètres, and the dysphagia and respiratory troubles were very marked. The author believes the condition to depend upon hereditary syphilis, the first manifestations having appeared in extreme childhood—four or five years.

A. Cartaz.

Meslay, R.—*Abscess of the Maxillo-Pharyngeal Region; Ulceration of the Internal Carotid; Rupture of Abscess in the Pharynx and the External Auricular Duct.* Soc. Anatomique de Paris, Dec. 21, 1894.

A CHILD, aged five years, was admitted into the Children's Hospital for purulent otitis. Some days previously he had sore throat, fever, and enlargement of the maxillary glands. Not feverish on admission, the throat was normal, except for a tolerably large hypertrophy of the tonsils. In the submaxillary region there was a painful adenopathy. On pressure over that region the purulent discharge by the external ear was notably increased. Two days later bleeding from the ear occurred, and in the night profuse hæmorrhage through the nose and mouth, arrested with difficulty by nasal plugging with salol gauze, injection of ergotin and artificial serum. On the following day there was a fresh hæmorrhage, extremely abundant. Incision (by Broca) in the angulo-maxillar region revealed a large cavity filled with pus and blood. Ligature of the internal carotid artery was performed, this being the probable source of the hæmorrhage. Death occurred during the night from syncope.

At the necropsy, blood was found in the stomach and bowels. The abscess of the submaxillary region was found to be due to a suppurative adenitis, and the abscess opened into the pharynx and the external auditory meatus. No inflammation of the median ear existed, nor perforation of the tympanum, but there was a large ulceration of the internal carotid at the part next the entry into the petrous bone.

A. Cartaz.

Raymond, Petit.—*Streptococcus and Menstruation.* "Gaz. Hebdomad. de Méd. Paris," Feb. 2, 1895.

UNDER this title the author relates twelve cases of streptococcal angina having some relations with menstruation. In every case, in young women, the commencement of the sore throat, shivering, fever, increase of temperature, and special symptoms of angina were in strict relation with the appearance of the menses. In

all cases the bacteriological examination of the tonsillar exudation revealed streptococcus. The author cannot explain the reason of this evolution of streptococcus in the mouth at this precise moment; the infection cannot be introduced by the genital passages. The catamenial period probably favours the development of streptococcus sometimes present in the mouths of healthy subjects. *A. Cartaz.*

Maurel, Paul.—*Infectiousness and Contagiousness of Acute Tonsillitis.* Thèse de Paris, 1895.

THE author has collected the numerous works upon this question and concludes, from clinical cases and bacteriological examination, that acute follicular tonsillitis is an infectious disease. The origin varies and results from the primordial morbid bacteria, streptococcus or staphylococcus. These microbes have been found in the secondary manifestations in the pleura, ear, articulations, etc. The contagiousness of the disease is not very intense, comparatively, but is real. He relates some original cases of propagation in persons of the same family, and advises prophylactic measures against the infection. *A. Cartaz.*

Walker, G.—*Dyspnoea after Excision of the Tonsils.* "Med. News," Dec. 8, 1894.

THE patient was twenty-two years of age, and had both tonsils removed, a four per cent. cocaine solution being used, the symptoms being those not rarely noticed in cocaine toxæmia of the non-fatal variety. *R. Lake.*

Machell, H. T.—*Papilloma of the Tonsils.* "New York Med. Journ.," Jan. 19, 1895.

THE patient, a young girl, aged ten, was admitted into hospital, suffering from sore throat. The history given pointed to the fact that enlargement of the tonsils had been noticed when the child was eight years of age, and also that a gradual increase in their size had taken place. Examination showed that there was well-marked enlargement of both lobes of the thyroid gland, and excessive enlargement of both of the tonsils. Both tonsils were studded with closely-packed papillary bodies, and presented at first sight a rough and ragged appearance. This rough appearance was seen to be due to large numbers of papillæ or pedunculated masses packed closely together, and extending downwards as far as could be seen or felt with the finger. They also bulged so far forward as to hide the uvula and rest on the base of the tongue. Each papillomatous growth seemed to have a separate and distinct entity. Some had a small pedicle, others larger, but none were sessile. During the patient's stay in hospital she contracted a sharp attack of scarlet fever, to which she rapidly succumbed. One of the tonsils having been enucleated after death, was examined microscopically, and found to be lymphadenoid in nature. True hypertrophy of the tonsil had taken place, tonsillar tissue having been reproduced. The author remarks upon the rarity of the affection and the value of enucleation as a means of getting rid of enlarged tonsils.

W. Milligan.

Panas.—*Bilateral Dacryosadenitis secondary to Tonsillitis.* "Semaine Méd.," Jan. 23, 1895.

THE author relates the case of a young man, twenty-five years old, admitted into the hospital for bilateral dacryosadenitis. One month before, he had had bilateral acute tonsillitis with cervical glands enlargement. Fever and adynamia lasted six days. Three weeks later, tumefaction of the lids occurred, lachrymal secretion was exaggerated, and little by little inflammation of lachrymal glands appeared.

The tonsils were now again enlarged, red, and presented purulent discharges. There was nasal bilateral discharge, muco-purulent. In these discharges were found, by cultures and bacteriological examinations, virulent streptococci and staphylococci. The author thinks that lachrymal inflammation is directly connected with infectious disease of the nose and tonsils.

A. Cartaz.

Gurney (Dovercourt).—*Arterial Hæmorrhage produced by Impacted Rabbit Bone in Œsophagus ; Recovery.* "Brit. Med. Journ.," Jan. 12, 1895.

THIS occurred in a man, aged eighty-six, who stated he had had a small bone in his throat for three days. On examination nothing could be detected. Passing an expanding probang into the œsophagus relieved symptoms somewhat, but did not remove the bone. After three days more the patient suddenly vomited a pint of arterial blood. Ice externally and internally was administered and the patient recovered. The bone had evidently sloughed through the œsophagus and perforated a large blood-vessel.

Wm. Robertson.

Hacker (Wien).—*On the Value of Œsophagoscopy by Electric Light for Diseases of the Œsophagus with special regard to Foreign Bodies.* "Wiener Klin. Woch.," 1894, Nos. 49 and 50.

THE author has performed a large number of examinations with Mikulicz-Leiter's electro-endoscope in normal and diseased œsophagus with the following results:—The normal œsophagus has a rosy colour; its lumen differs in its different parts. Respiratory, pulsatory and peristaltic movements can be observed. In acute inflammations the œsophagus is more red than normal; in chronic it is pale and œdematous; after the extraction of foreign bodies little wounds can be seen in the mucous membrane; partial dilatation, compression and strictures can be detected by variations of the lumen. The author has observed more than one hundred cases of cancer; most of them were in the region of the bifurcation. In the early stages of the disease the œsophagus shows protuberances, redness, cyanosis, stenosis of the lumen, and thickening of the epithelium. In later stages ulcerations can be seen. Usually it is possible to diagnose the cancer upon the first examination with certainty. The best therapeutical effects can be obtained in the case of foreign bodies. It is possible to remove impacted bodies, which could not be done in any other manner. In healthy gullets the foreign body is usually retained at the region of the bifurcation. The author was able to remove an impacted plate of artificial teeth, an impacted bone which could not be extracted in Schroetter's clinic, two pieces of bones impacted in the same region, soft bodies which could not be pressed down by bougies, and in some cases pieces of meat or fruit stones. In cases of strictures of the œsophagus, in which the strictured part was obturated by foreign bodies, gastrotomy and œsophagotomy were also avoided. From these diagnostic and therapeutical results the great value of the electric œsophagoscope is proved.

Michael.

Friedrich (Leipzig).—*Varices of the Œsophagus.* "Deutsche Archiv für Klin. Med.," Band 53, Heft 5 and 6.

A CHILD, six years old, suffering for two years from hæmatemesis and chorea. The hæmatemesis was thought to be caused by an ulcer of the stomach. Two years after the commencement of the disease the child died from repeated hæmorrhages. The *post-mortem* examination showed that there was nothing pathological in the stomach, but the œsophagus was filled with thick varicose veins. No etiology of the disease could be discovered. Varicose veins at such an early age have not before been observed.

Michael.

Mandach (Schaffhausen). — *Cure of a Diverticulum of the Œsophagus by Operation.* "Correspbl. für Schweizer Aerzte," 1894, No. 24.

A PATIENT, sixty-two years old, had for many years difficulties of swallowing, increasing more and more, until he could not any longer swallow anything, even fluids. The examination showed that there was an œsophageal diverticulum on the right side of the trachea. Extirpation of the diverticulum was followed by complete cure.

Michael.

Schmidt, Meinhardt (Cuxhaven). — *External Œsophagotomy.* "Deutsche Zeitsch. für Chir.," No. 39, Heft 5 and 6.

A GIRL, twenty-one years old, had difficulty in swallowing for some time, which increased so that the patient could not swallow anything. Examination showed stricture of the œsophagus, impermeable to any probe. No cause for the stricture could be found. Œsophagotomy was followed by feeding with a canula. Some months later, division of the stricture and dilatation with bougies was made. Cure followed. Now the patient can swallow very well; has increased twenty-two pounds. Bougies are introduced occasionally.

Michael.

NOSE AND NASO-PHARYNX.

Bresgen (Frankfurt-a-Main). — *Nasal Diseases of School Children.* "Münchener Med. Woch.," 1895, No. 1.

ON the relation of nasal diseases to the general health, headache, and aural diseases of school children.

Michael.

Pierre, J. — *Nature of Scrofulous Diseases of Eyes, Ears and Naso-Pharynx; Treatment by Sea Climate.* Thèse de Paris, 1895.

SCROFULOUS inflammations of eyes, ears and naso-pharynx are local diseases, depending ordinarily upon another local disease, viz., adenoid vegetations. They are not the result of the so-called scrofulous temperament, but of anterior and primitive marasmic conditions of childhood. The recurrences and persistence of these, otitis, blepharitis, and rhinitis are due to numerous micro-organisms seated in the crypts of hypertrophied tonsils. Ablation of the adenoid tumours is the only treatment, to be combined with sea air and seaside as modifying agents of the general health.

A. Cartaz.

Black, G. M. — *A new Instrument for Vibratory Massage of the Nasal Mucous Membrane.* "New York Med. Journ.," Dec. 22, 1894.

THE author, after an extended experience of massage of the nasal mucosa in cases of atrophic rhinitis, has formed a very favourable opinion of its utility. The main objection he found was that the manipulations were very tiring to the operator. To overcome this, the motor power for propelling his instrument is derived from an eighth horse-power electro-motor, to which is attached a White's dental shaft and hand-piece. To the hand-piece is attached the probe-carrier, which slips over the hand-piece by two rings, and is held in place by thumbscrews. The probe, made of copper and with a bulbous end, slips into a tube soldered to the two rings, and held fast by another thumbscrew. Introduced into the hand-piece is a shaft which carries a piece of leather. As the shaft revolves, the leather strikes against the probe during each revolution, and causes it to vibrate. Any

number of vibrations can be obtained up to several thousand a minute, according to the capacity of the motor. With this form of intra-nasal vibrator the author has found the use of cocaine unnecessary, as the vibrations are so gentle and regular that the patients rarely complain.

W. Milligan.

Cimmino.—*Rhinitis Caseosa, or Cholesteatomatosa.* "Bollett. Malattie dell Orecchio, &c.," Sept. and Oct., 1894.

REFERENCE is made to the scarcity of British and German literature on this subject, which was first fully treated of by Duplay in 1874. The author claims to have seen three cases during the three years he had been assistant in the clinic of Prof. Cozzolino, although the latter had previously only come across three cases during the preceding twenty years. He only narrates one of them, but, unfortunately for his thesis, in the following number Prof. Massei writes to say that he had opened an abscess of the septum in the same patient a few days previously, and that the cholesteatomatous masses were simply inspissated pus.

St. Clair Thomson.

Guilpin, Fernand.—*Study of Simple Atrophic Rhinitis and Ozæna.* Thèse de Paris, 1895.

THE author believes atrophic rhinitis to be absolutely distinct from ozæna. The first is a consequence of a vascular sclerosis, the second of epithelial sclerosis. Sometimes both can be observed simultaneously in the same patient. The bad odour of ozæna is the result of fermentations by micro-organisms. This pamphlet is neither clear nor demonstrative.

A. Cartaz.

Sulzer.—*Optic Neuritis secondary to Ozæna.* "Annales d'Oculist.," Jan., 1895.

THE author relates two cases of optic neuritis appearing as a manifestation of ozæna. The first patient, a man, aged thirty-four years, had ozæna since childhood; he had been operated on by Rouge's method, without success. The habitual treatment by washings had not been conducted so regularly for some months, and at that precise period the ocular troubles appeared. Now papillitis and optic neuritis are well defined. The treatment of the rhinitis is ordered with the greatest care by washings, pulverization, and internally iodide of potassium, in spite of the absence of specific origin. In proportion as the state of the nose improved the ocular troubles disappeared. In the second case, a woman, aged twenty-four years, similar lesions occurred in the optic nerve with ozæna. Similar improvement of the ocular disease followed after cure or improvement of the ozæna.

A. Cartaz.

Sanger (Magdeburg).—*A Mechanical Device for Ozæna.* "Therap. Monats.," 1894, No. 10.

OZÆNA, as is well known, is most often observed in noses having large cavities. The author believes that the broadness of the nose favours the development of ozæna in a high degree, from the smaller intensity of the respiratory stream. This diminution in intensity prevents the differences of air pressure during inspiration and expiration, and has, therefore, an unfavourable influence on the circulation and secretion of such nasal cavities. In normal noses the blood is aspirated into the vessels during inspiration, and expelled by expiration. The author has, therefore, constructed a little apparatus, consisting of two small plates stenosing the entrance of the nasal meatus. He has applied this apparatus in some cases of ozæna. In slight cases he obtained cure; in grave cases improvement.

Michael.

Dedieu.—*Furulent Rhinitis in Children.* Thèse de Paris, 1895.

THE author studies suppurative rhinitis specially in the new-born and young children. The frequency of this disease is the result of a special anatomical disposition of the nasal passages in childhood, the narrowness of these passages, and the tendency to pyogenic infections. He believes purulent rhinitis to be frequently caused by gonococcus, but he does not give any bacteriological proofs of the blennorrhagic origin; he indicates the symptoms, principal complications (bronchitis, otitis, etc.), and discusses the treatment (nasal boracic irrigations, antiseptic powders). A. Cartaz.

Eudlitz.—*Syphilitic Primary Ulcer of the Lower Border of the Nasal Septum (Sous-Cloison).* Soc. Française de Dermatol, Feb. 14, 1895.

THE syphilitic chancre was situated upon the nasal septum (sous-cloison), between the nostrils; the ulceration had eroded the tip of the nose. Origin unknown. The woman was forty-five years of age. The characteristic roseola appeared six weeks after the ulcer. A. Cartaz.

Martin, W.—*Some Rhinological Cases of Interest.* "Med. News," Jan. 26, 1895.

(1) ANGIOMA of naso-pharynx. A fair-sized tumour, springing from the "posterior turbinated tissue," red and pulsating synchronously with the heart. The growth was pedunculated. (2) A button in a child's nose, which had been unrecognized for one year. (3 and 4) Deviation of septum and split septum; the latter appears to have been a hæmatoma of the septum. (5) Angio-neurotic oedema, a case of a woman twenty-eight years of age, who, during treatment for hypertrophic rhinitis, developed oedema of the left orbital tissues. The variety of treatment previously used is not stated. R. Lake.

Gouguenheim.—*Deviations of the Nasal Septum.* "Semaine Méd.," Feb. 20, 1895.

CLINICAL lecture. Nothing new.

A. Cartaz.

Chaput.—*Restoration of Nasal Deformities by Metallic Prothesis.* "Bull. Soc. de Chir., Paris," XX., p. 845.

THE author relates two cases of nasal deformities, sinking in of the nose, from syphilitic osteitis with destruction of bones and cartilages. For the correction of the nasal depression, he has used the prosthetic system of Martin, a metallic (platinum or silver) trivet, inserted under the cutaneous tissues. But the author's proceeding differs from that of Martin, etc. By a horseshoe section he divides the cutaneous tissues of the nose from the forehead over the lateral parts, and along the ala of the nose, but without opening the mucous membrane. The metallic support is inserted under this cutaneous flap, and fixed in adjacent bones by drilling. The flap is sutured and the wound dressed with iodoform powder. If the skin of the nose is in a bad state or ulcerated, flaps must be taken from the cheeks or the forehead. This metallic "*trivet*" is well tolerated. The author has a patient operated on by this rhinoplastic proceeding fourteen months ago, and who is now without trouble or pain. A. Cartaz.

Surmay.—*Deviations of the Nasal Septum. New Treatment.* "Bull. Soc. de Chir.," XXI., p. 36.

THE case of a young man, aged twenty, with a large deviation of the nasal septum in the anterior part of the left nasal fossa. After anaesthesia by cocaine, the author divided the inferior part of the septum with tenotome and transfixed in cutting the

whole deviated portion, creating a large opening between the two cavities of the nose. Rapid cure resulted, with complete disappearance of respiratory trouble and nasal voice.

A. Cartaz.

Domoe.—*Treatment of Palpebral and Nasal Epithelioma by Methyl-Blue.*
Thèse de Paris, 1895.

THE author has employed, with success, the procedure of Mosetig-Moorhof in twenty-one cases of pavement epithelioma of the lids and nose. He destroys the ulcerated and vegetating parts with the galvano-cautery, after cocaine anæsthesia, and chromic acid. The wound is dressed with methyl-blue powder. After some days, the surface granulates and the scar is epidermized. Methyl-blue has antiseptic power and reaches deep into the tissues, modifying the neoplastic epithelial cells.

A. Cartaz.

Ziem (Danzig).—*Second Article on Diseases of the Nose in Infectious Diseases, with special regard to Diphtheria.* "Munchener Med. Woch.," 1895, No. 8.

REVIEW of Harke's book on pathological anatomy of the accessory cavities.

Michael.

Michael.—*On a Case of Empyema of the Antrum of Highmore caused by an Aberrant Tooth.* Aerztlicher Verein in Hamburg Meeting, Dec. 11, 1894.

A PATIENT, twenty-nine years old, suffered some weeks previously with swelling of the cheek and a tumour on the side of the last left upper molar tooth. She was treated by extraction of the tooth, opening of the antrum of Highmore, and irrigation, followed by tamponing with iodoform gauze. The disease not improving, she came under the author's treatment. She now had a very fetid secretion of the nose and mouth. Examination with a probe showed there to be a tooth in the antrum of Highmore, which was removed by an elevator and sharp spoon, and the empyema then ceased in a short time. Another patient consulted the author for a swelling of the upper lip. Examination showed a tooth to be across the gum of the front teeth. Incision and removal of the tooth was followed by cure.

Michael.

Krecke (München).—*Contribution to the Pathology and Therapy of Chronic Empyema of the Frontal Sinus.* "Münchener Med. Woch.," 1894, No. 51.

THE author has operated in three cases. Two of them have been cured. The third case, with a fatal ending, he relates in detail. A patient, fifty-eight years old, complained of disease of her nose since early youth, and was operated upon for nasal polypus. For a year she had a swelling of the left eye. Eight weeks later there arose a fistula with much discharge of pus. The author found this swelling, a fistula discharging much pus, protrusion of the bulb and suppuration of the nose. A large opening of the frontal sinus under narcosis was performed. The frontal sinus was seen to be as large as an egg, with a chronically inflamed mucous membrane. The mucous membrane was removed and also a part of the nasal bone. For fourteen days cure progressed normally. Then suddenly there arose headache, somnolence, and death the next day. The *post-mortem* examination showed meningitis and an abscess the size of a nut in the frontal lobe.

Michael.

Lagrange.—*Empyema of the Frontal Sinus, a Sequel of Influenza, spontaneously opened at the corner of the eye.* "Journ. de Méd., Bordeaux," Feb. 17, 1895.

A WOMAN, thirty years of age, on December 1st had a severe cold and influenza. Rhinitis, with abundant mucus secretion. Eight days later violent pains occurred

at the root of the nose, and tumefaction at the corner of the left eye. The resident physician diagnosed probable phlegmonous abscess of the lachrymal duct. On December 15th spontaneous rupture of the tumefaction occurred; discharge of pus, rapid diminution of the pains and inflammatory swelling. Never was any purulent discharge observed from the nose. The probe directed through the small orifice reached a portion of diseased bone in cavity of frontal sinus. *A. Cartaz.*

Starrs, C. B.—*Report of Case of Congenital Naso-Pharyngeal Atresia*, "Amer. Lancet," Feb., 1895.

AN infant, seven months old, was brought to the author for difficulty in breathing. A membrane was found, "at a level of the inferior turbinate bones," completely occluding them. This, after division and dilatation, gave no further trouble.

R. Lake.

Verneuil, Prof.—*Naso-Pharyngeal Polypi*. "Le Progrès Médical," Dec. 22, 1894.

IN a discussion before the Société de Chirurgie the author explains his preference in ninety-five per cent. of the cases for a slow method of treatment, to the radical, rapid, and complete operation. He follows Nélaton in abandoning the preliminary excision of the superior maxilla, and exposes the tumour by dividing the palate. The soft palate should not be sutured at once, as it may then conceal a recurrence of the growth. The usual teaching was that the more serious the nature of the polypus the larger should be the operation undertaken, but M. Verneuil holds that the more malignant the neoplasm the more innocent should be the methods employed. When a caustic is used he recommends chromic acid.

St. Clair Thomson.

Hopman (Köln).—*On Plastic Reproduction of the Upper Naso-Pharynx, especially of the Choanæ*. "Deutsche Med. Woch.," 1894, No. 51.

BY the application of Stent, as used by dentists, and used for reproductions of the naso-pharynx in the cadaver by Suchanek, the author was able to produce instructive reproductions of the naso-pharynx and choanæ (see also the report of the laryngological section of the International Congress).

Michael.

Hopkins, F. E.—*The Recurrence of Lymphoid Hypertrophy in the Naso-Pharynx*. "New York Med. Journ.," Jan. 26, 1895.

IN this paper the author draws attention to the possibility of the recurrence of naso-pharyngeal adenoid vegetations after their previous removal. He cites several illustrative cases, and quotes the opinions of many authors. He admits that recurrence does take place, that it takes place more frequently than is usually supposed to be the case, and that it may happen even after every vestige of the tissue has been removed from the naso-pharynx. The author strongly insists upon complete removal of the growths, the use of a general anæsthetic in children up to fifteen years of age, and suggests that great care be taken in the after-treatment of the cases, especially in looking into the hygienic surroundings of the patient.

W. Milligan.

Ziem.—*On the Operation for Adenoid Vegetations*. "Monats. für Ohrenheilk.," Nov., 1894.

THE author emphasizes the desirability of operating under the guidance of the finger in the naso-pharynx. He employs a snare, which he introduces through the anterior nares. The wire passes through two parallel tubes, fastened together with sliding rings of zinc. The instrument is thus capable of a certain amount of bending. Any remaining fragments which the snare cannot grasp are removed by

means of Trautmann's spoon. After the clearance he washes out the nose and naso-pharynx with an air-tight pump, and he attributes the occasional occurrence of purulent otitis to too forcible blowing of the nose after the operation, not to the irrigation. He operates without general anæsthesia or even local cocainization.

Dundas Grant.

Wilson, A.—*Operations on Post-Nasal Adenoids from the Anæsthetist's Stand-point.* "The Med. Chron.," Feb., 1895.

THIS paper will be read with special interest at the present time, when so much has been said and written of late upon the important question regarding the proper anæsthetic to use during the removal of post-nasal adenoids.

The author remarks at the outset of his paper that it is impossible to perform any efficient operation for the removal of adenoids without the use of some general anæsthetic. Children—and it is with children that the operator has most frequently to deal—the subjects of adenoids are usually pale and anæmic, and are therefore unusually susceptible to shock. Consequently they should not be exposed to any severe preparation for the operation, such as prolonged deprivation from food. Vomiting during the operation is a minor evil as compared with faintness. In order to meet the special requirements of adenoid cases (where partial obstruction to nasal respiration exists) the anæsthetic should be one which is non-irritating to the pharynx, which can be rapidly taken, is not unduly depressing, and does not interfere with the proper aëration of the blood, and also one which can be given during the operation. The three anæsthetics in general use are nitrous oxide, ether, and chloroform, alone or in combination.

Nitrous oxide is unirritating, pleasant to take, quick in its action, recovery from it is rapid, it is quite safe, and can be given with the patient in the sitting position. It, however, possesses decided disadvantages. The duration (especially in children) is very short, and a good deal of muscular spasm is produced, especially in young subjects. The duration of the anæsthesia is always uncertain, and with hæmorrhage going on from the pharynx it is dangerous to re-apply the inhaler. In addition, the deep gasping inspirations which occur on the return of consciousness introduce another element of risk, viz., that blood or detached fragments of adenoids may be drawn into the larynx. The author remarks that the dread of pharyngeal hæmorrhage when the patient is unconscious is absolutely without foundation. In hæmorrhage, however profuse, from the pharynx during any operation, the patient if placed in a proper position is infinitely safer when completely anæsthetized than when semi-conscious or actually conscious. With a semi-anæsthetized or just conscious patient there is fright, struggling, irregular respiration, and coughing; blood is drawn into the larynx, coughing and spasm set up, and breathing greatly hindered, while it is difficult or impossible to deal with the hæmorrhage. It is an absolute disadvantage that the patient should recover consciousness while hæmorrhage is going on, and especially when there are any loose growths in the pharynx. In view of the above-mentioned facts nitrous oxide alone is not adapted as a routine anæsthetic for post-nasal adenoids.

The author regards ether as a safe anæsthetic in such cases, as it is not depressing, with it there is no danger of cardiac failure, and the patient keeps a good colour and a good pulse throughout the operation. It is also possible and consistent with safety to produce a deeper degree of anæsthesia with ether than with chloroform, and the anæsthesia is of longer duration. On account of the ease with which chloroform can be given it is an excellent anæsthetic for such cases. There is also the advantage that it can be continued even while the operation is in progress. In practice the author adopts the following routine system: in adults, or children old enough not to be alarmed by the apparatus,

nitrous oxide is first given, followed by ether; while during the operation, if it is necessary, the anæsthesia is kept up with chloroform given cautiously from a piece of lint. In young children chloroform is given from the first, and if taken well is continued throughout the operation. If, on the other hand, there is any reason from the feeble condition of the patient to suspect faintness, the chloroform is replaced by ether as soon as the patient becomes semi-conscious.

Regarding the position of the patient, it should be one which is conducive to the safe administration of the anæsthetic and one which will have no tendency to aggravate shock. It must be a position also which will allow the operator free access to the pharynx and permit of the rapid escape of blood, while at the same time it retards the suction into the larynx of detached pieces of adenoid tissue. Of the many positions employed the most advantageous of all is with the patient upon his back, the head fully extended or hanging over the edge of the table. This position (first called attention to by Mr. Mitchell Banks) places the patient in the safest position for the administration of any anæsthetic, and is one which is directly antagonistic to the production of shock. It is also the most stable position. In addition, with the head extended and the mouth open, respiration is most easily performed. It also gives the operator a good view of, and free access to, the pharynx, the tonsils, and adenoid growths. From the point of view of hæmorrhage the position is likewise most advantageous. With the head fully extended, the nostrils and the upper incisor teeth are placed on a lower level than the aperture of the larynx. Hence blood gravitates at once to these most dependent points. An objection has been urged against this position that the congestion from the dependent position increases the hæmorrhage. Although this may to some extent be true, the advantages of the position greatly outweigh this disadvantage, while it must also be remembered that the amount of hæmorrhage depends to a great extent upon the particular method of operating.

W. Milligan.

Pissot, C. — *On Naso-Pharyngeal Irrigation—its Indications.* Thèse de Paris, 1895.

NOTES on the indications of naso-pharyngeal irrigations in chronic purulent rhinitis, sinusitis, and as a prophylactic in eruptive fevers (measles, scarlatina, typhoid fever, etc.).

A. Cartaz.

LARYNX AND TRACHEA.

Rethi (Wien). — *Some Rare Laryngeal and Pharyngeal Affections following Influenza.* "Wiener Klin. Woch.," 1894, No. 48.

1. A PATIENT, fifty-eight years old, acquired influenza. A few days after he contracted pain in the neck and hoarseness. The examination showed the existence of herpes of the soft palate, and a median position of the right vocal cord (paralysis of the right recurrent). The herpes was shortly cured, and the paralysis disappeared in about three weeks.

2. A patient, forty-five years old, suffered from influenza and febrile tracheo-bronchitis. The laryngoscope showed a median position of the left vocal cord. In this case also the condition must be regarded as recurrent paralysis.

3. A patient, eighteen years old, with febrile influenza and laryngitis, with cough, on the fifth day of the disease presented a swelling over the thyroid region, combined with redness and swelling of the laryngeal mucous membrane. The swelling and hyper-sensibility of the throat and neck persisted for eight weeks, and then slowly disappeared.

4. A patient, thirty-three years old, attacked with influenza, presented six days afterwards a tumour the size of a nut over the laryngeal surface of the epiglottis. The patient did not allow any operation, but twelve days later he discharged a great deal of pus on coughing. The laryngoscope now showed an ulcer in the place of the tumour, which was cured in three weeks.

5. In one case the author observed a fibrinous pharyngitis complicating an influenza and followed by an erythema nodosum of the skin.

6. A patient, eleven years of age, had large adenoid vegetations of the nasopharynx which caused complete obstruction of the nose, and which it was intended to operate upon had not the patient been attacked with febrile influenza. When the influenza was cured the adenoid vegetations and their consequences, viz., obstruction of the nose and aprosexia, had disappeared. This disappearance of such growths in acute infectious diseases is very rare. More often an enlargement of the hypertrophied tissues is observed.

Michael.

Haring, N. C.—*Nodes of the Vocal Cords.* "The Med. Chron.," Feb., 1895.

THE main symptoms complained of are undue fatigue in speaking, and loss of the singing voice, the high notes being the first to be lost. In almost all cases there is a history of excessive use of the voice, the occupation of the patients being school-teachers, singers, preachers, etc. Of twenty cases analyzed, fifteen occurred between the ages of eighteen and twenty-two. None were under eighteen, while the oldest was forty-four. Sixteen of the twenty patients were females. The writer regards the actual cause of the trouble to be mechanical injury to the cord, due to want of tone set up by fatigue. Regarding treatment, the first and main indication is vocal rest. If after one month's rest of the voice the tone of the vocal cords is not re-established, and the patient is unable, owing to the nature of his or her calling, to reduce the vocal strain, a change of occupation should be enjoined. Locally, chromic acid fused upon a probe, and applied to the nodes, will be found efficacious. During an intercurrent attack of catarrh, treatment should be stopped.

W. Milligan.

Virey.—*Stridulous Laryngitis with Lasting Aphonia.* "Journ. de Clin. et Thérap. Infants.," Feb. 21, 1895.

THE title indicates the cases. No laryngoscopic examination was made. Spontaneous cure of the aphonia occurred some days after.

A. Cartaz.

Baumgarten (Pesth).—*Etiology of Laryngeal Cancer.* "Pester Med. Chir. Presse," 1894, No. 24.

IN two cases the affection arose in persons who shouted and spoke very greatly, and in both it followed a chronic laryngeal catarrh. One of them was a gentleman, sixty-two years old, who was a member of many clubs where there was much toasting; the second, a man, seventy-six years old, who shouted very much. The author believes that there is a relation between the disease and the excessive use of the voice.

Michael.

Berndl (Strelsund).—*Removal of Foreign Bodies from the Larynx of a Child one and three-quarter years of age.* "Deutsche Zeitsch. für Chir.," Band 39, Heft 5 and 6.

A CHILD, one and three-quarter years of age, who had swallowed a walnut, suddenly became dyspnoic with severe stridor and hoarseness. Tracheotomy was performed. Respiration became normal, but the canula could not be removed and the hoarseness remained. Ten days later, thyrotomy and removal of three pieces

of walnut. Suture of the cricoid cartilage. Eight days later the canula was removed. Cure resulted with normal voice. In such young children a good result from these operations is very rarely obtained.

Michael.

Mendel.—*Tubercular Laryngitis*. "Ann. de Méd.," Feb. 15, 1895.

REVIEW. Nothing new.

A. Cartaz.

Variot.—*Some Reflections on Laryngeal Tubage in Diphtheria*. "Journ. de Clin. Infant.," Jan. 24, 1895.

THE author relates the various complications of this operation, and shows from some cases that tubage is dangerous in private practice, when it is impossible to ensure the presence of a medical attendant. The tube is frequently obstructed by pseudo-membrane or suppuration, or easily rejected.

A. Cartaz.

Eymonnet, V.—*Tracheotomy in Adults—Technique and Indications*. "Thèse de Paris, 1895.

REVIEW of the principal methods of tracheotomy and its indications. Nothing new.

A. Cartaz.

Maunoury.—*Laryngeal Extirpation*. "Bull. Soc. de Chir., Paris," XX., p. 859.

THE observation of a workman, aged fifty-eight, having difficulty of breathing and dysphagia for some months. Hoarseness and some irritation of the fauces had lasted ten years. Tracheotomy became necessary for sudden suffocation.

At the laryngoscopic examination malignant tumour of the larynx was found. Anæsthesia, Trendelenburg's canula, and vertical laryngectomy made the diagnosis complete. The epithelioma invaded the two parts of the larynx. Total extirpation by Perier's proceeding was carried out (transverse superior and inferior sections). Cure resulted in three weeks.

A. Cartaz.

Péan.—*Total Extirpation of the Larynx Superior Part of the Œsophagus, and Inferior Part of the Pharynx*. "Bull. Acad. de Méd., Paris," Jan. 22, 1895.

THE case of a man, fifty years of age, with epithelioma of the larynx. No troubles of deglutition. He was operated upon on November 29th, under chloroform anæsthesia. A vertical incision of the soft parts of the neck was made. Complete transverse section of the trachea and insertion of Trendelenburg's canula. Section of the thyroid cartilage; the larynx was invaded on both sides by cancerous infiltration. Extirpation of the larynx, with the hyoid bone, was performed. The disease was not confined to the larynx; the superior part of the œsophagus and inferior part of the pharynx were also degenerated. Excision of these parts with resection of the carotid artery after ligature was performed. The trachea was sutured to the external integument; the orifice of the œsophagus was sutured behind, and an œsophageal tube left *in situ*. The histological examination confirmed the diagnosis of epithelioma. There was a successful result. After a month the cicatrization was complete, the œsophageal aperture being situated two centimètres above the tracheal orifice.

The author has completed the operation by a prothetic apparatus, uniting the œsophageal tube with the tracheal canula, permitting of easy feeding and the passage of inspired air by the pharynx and nasal fossæ.

The author gives the statistical results of cases of laryngectomy with extirpation of parts of the œsophagus or pharynx. In thirty-seven cases, death has occurred twenty-three times in from one day to seven months—from pneumonia, ten; relapse of cancerous disease, four; collapse, four; inanition, four; secondary hæmorrhage, two; septicæmia, one.

A. Cartaz.

Frankenberger (Prag).—*On Artificial Tracheal Stenoses*. "Allg. Wiener Med. Zeitung," 1895, Nos. 1, 3 and 5.

EXPERIMENTAL researches on animals.

Michael.

Colley (Marburg).—*Resection of the Trachea*. "Deutsche Zeitsch. für Chir.," Band 40, Heft 1 and 2.

RESECTION of the trachea was performed, in a case of stricture of the trachea in consequence of traumatism, with good results. The author then made experiments as to the best method of resection, and concluded that it would be best to cut the cartilages in bayonet form, so that the resected part should consist of the posterior halves of three cartilages and the anterior halves of three other cartilages. By this proceeding cicatricial stricture is prevented.

Michael.

Ewald (Wien).—*Tracheal Compression from Struma and its Consequences*. "Vierteljahrsschrift für Gerichtliche Medicin," 1894, Supplement.

A PAPER of the greatest interest. Many researches have shown that the thyroid gland is not separated from the trachea by a capsule, but that the hypertrophic colloid tissue of the thyroid gland always reached to the perichondrium of the trachea. This adhesion of the thyroid gland to the trachea is the principal cause of the compression of the trachea by struma. By this adhesion the vessels about the trachea, and those of the trachea itself, are also compressed, and, therefore, catarrh by stagnation may easily arise. Single tumours circumscribed by the same connective capsule as the trachea can only increase in this capsule, and produce, therefore, the different forms of compression observed in such cases. This hypothesis also explains why often great stenoses are caused by rather small tumours; the peculiarity of sudden death by goitre also can be understood by this adhesion.

Michael.

Lautier.—*Death occurring by Penetration into the Left Bronchus of a Tracheotomy Tube*. "Bull. Soc. Scientif. de l'Ouest," III., 4, p. 223.

A MAN, sixty years old, was tracheotomized fifteen years previously for laryngeal stenosis. For many years the patient used bad tubes without pinion, and one day the tube slipped through the tracheal opening and occluded the respiratory tract. Unsuccessful attempts were made at extraction, and death resulted from asphyxia. At the *post-mortem* examination the tube was found fixed in the left bronchus.

A. Cartaz.

THYROID GLAND, NECK, &c.

Kocher (Bern).—*The Function of the Thyroid Gland with relation to the New Methods of Treatment of the diverse Forms of Goitre*. "Correspbl. für Schweizer Aerzte," 1895, No. 1.

IN twelve cases the author has used thyroid gland extract in cases of goitre. In five cases observed in the hospital and in five out-patient cases a definite influence of the treatment could be observed; the goitres decreased in a high degree, but in no case disappeared. Nearly the same effect is obtained by the well-known iodine treatment. The experience of many years shows that nearly ninety per cent. of all cases can be improved by the use of iodine; only in ten per cent. does surgical treatment become necessary. The author, therefore, does not believe that the new treatment will have any great practical value in the treatment of goitre. Of much greater value is feeding with thyroid gland for treatment of cachexia strumi-

priva and myxœdema. The fact that the same treatment can decrease the hypertrophied gland and improve the consequences of the absence of the gland leads to the consideration that goitre is also a consequence of diminution or deterioration of the normal secretion of the thyroid gland. This is also probable from the fact that cretinism is observed combined with hypertrophy and in other cases with atrophy of the thyroid gland. As to this theory, it is necessary to review another disease in its relation to the thyroid gland—viz., Basedow's (Graves') disease. This is probably a complex of symptoms produced by hyper-activity of the thyroid gland. The symptoms are in all points contrary to those of myxœdema and cachexia strumipriva. Here feeding with thyroid gland would deteriorate the general condition. Trachewsky has found that by the use of phosphate of soda the symptoms of Graves' disease can be improved. By extirpation of the gland or by atrophy from ligature of the arteries the symptoms of Graves' disease are also improved. The same result sometimes is obtained by the use of iodine. Excision of the gland and the so-called exothyropexy (luxation of the gland in cases of compression of the trachea) sometimes produce symptoms similar to Basedow's disease. This effect is observed in sudden but transient inundation of the body with secretion of the gland irritated by the operative proceeding. The influence of water on goitre must be explained in this manner: the water contains a toxic material; the thyroid gland absorbs the material and increases, but as soon as its compensatory power is exhausted the symptoms of cretinism arise. *Michael.*

Kocher (Bern).—*Notes to the Paper on the Functions of the Thyroid Gland.* See the last number of the "Schweizer Correspbl.," 1895, No. 1.

HISTOLOGICAL description of one of the extirpated goîtres. *Michael.*

Anderson.—*Contribution to the Knowledge of the Morphology of the Thyroid Gland.* "Archiv für Anat. und Physiol. (Anat. Abtheilung)," 1894, Heft 3 and 4.

CAREFUL examinations by the author gave the result that the conditions of rest and activity of the thyroid gland differ from one another by characteristic changes in the epithelium of the gland and of the contents of the follicles. Details must be seen in the original. *Michael.*

Jeanselme, E.—*Infectious Thyroiditis and Strumitis.* "Gaz. des Hôp.," Feb. 2, 1895.

CRITICAL review of recent works on this subject. The author believes infection to be the only origin of thyroiditis. The infectious germ is variable, and may result from bacteriological products of typhoid fever, erysipelas, puerperal fever, etc. This disease, more frequent in women than in men, has been observed as a complication or sequel of every infectious disease. According to the infectiousness of the primary disease, the inflammation is more or less serious, and has more or less proclivity to suppuration, abscess, or gangrene. The author reviews the principal symptoms of thyroiditis at the different stages of the inflammation, and describes the forms—latent, suppurative, with abscess, and with or without accidents of compression of the trachea, dissecting, and gangrenous. It is an excellent general review. *A. Cartaz.*

Lund (Manchester).—*Cyst of Thyroid.* "Brit. Med. Journ.," Jan. 5, 1895.

THIS was a case in a girl, aged eleven, of cyst of the thyroid, complicated with laryngeal paralysis. Dysphagia and dyspnoea existed. The voice became affected from abductor paralysis of the left vocal cord. After removal of the cyst the voice was improved, but there was no alteration in the condition of the cord. *W. Robertson.*

Erselberg (Utrecht).—*Disturbances of Development in Animals following Early Extirpation of the Thyroid Gland.* "Langenbeck's Archiv," Band 49, Heft 1.

THE author has extirpated the strumous gland in young animals, and found that the consequence was disturbance of development, so that the animals operated upon remained very small. The damage was much greater in herbivora than in carnivora. Sometimes also there arose other disturbances, such as idiocy, tetanus, a marasmus similar to senile marasmus, myxœdematous degeneration of the connective tissue, decrease of temperature and atrophy of the genital organs.

Michael.

Launz (Bern).—*Treatment of Goître with Thyroid Gland.* "Correspbl. für Schweizer Aerzte," 1895, No. 2.

RECOMMENDATION of this treatment.

Michael.

Roberts, J.—*Thyroidectomy in the Treatment of Goître.* "Amer. Lancet," Feb., 1895.

THE period of three months is given as ample time for the exhibition of drugs, when, failing improvement, operation becomes advisable. Pressure on the trachea causing dyspnoea and on the recurrent causing hoarseness are suggested by the author as indicating early operation. Operation in exophthalmic goître is not approved of. The paper concludes with the description of operations on two cases.

R. Lake.

Von Gernet (Dorpat).—*Casuistics of Enucleation of Goître by Socin's Method.* "Deutsche Zeit. für Chir.," Band 39, Heft 5 and 6.

REPORT of thirteen cases all operated upon with best results. The details are only of surgical interest.

Michael.

Von Gernet (Dorpat).—*Contribution to the Treatment of Myxœdema.* "Deutsche Zeitsch. für Chir.," Band 39, Heft 5 and 6.

A PATIENT, forty years old, for six years had all the symptoms of myxœdema, and had been treated without any effect by many methods. Implantation of the thyroid gland of a sheep under the pectoral muscle was therefore performed. For some months all symptoms of myxœdema disappeared. The patient then had profuse diarrhoea. Subsequently all signs of improvement disappeared, and the former condition recurred. The patient left the hospital uncured. Treatment by feeding with thyroid gland was then begun with the best results; all symptoms have disappeared, and the patient is quite well. In four months she has used 108 grammes of thyroid gland; she takes twice a week 1·85 gramme. When she takes more, signs arise of intoxication, such as noises in the ears and palpitation. She has a craving for thyroid gland if she does not get it, but only if any symptoms of myxœdema arise does she require to take her maximal dose of nearly two grammes. At other times she only requires the fourth or fifth part. The author believes that longer treatment with feeding and injections will have deleterious effects in patients, and hopes that implantation will have good results in cases which become normal by the method of feeding. In cases of myxœdema the gland is absorbed in a short time.

Michael.

Mendel (Berlin).—*Three Cural Cases of Myxœdema.* "Deutsche Med. Woch.," 1895, No. 7.

1. A PATIENT, fifty-eight years old, had since eleven years of age the symptoms of myxœdema in a high degree. Application of thyroid tablets resulted in cure, but the patient is obliged to take tabloids from time to time.

2. A lady, forty-six years old, had for two years swelling of the eyelids, palpitation, loss of hair, and, later, swelling of the whole skin. Injections of thyroid substance were without effect. Cure was obtained by the use of tabloids. She now uses tabloids from time to time.

3. A patient, forty years old, with all the symptoms of myxœdema, was improved by injections of thyroid substance, but was cured in a short time by the internal use of thyroid tablets. *Michael.*

Palleske (Neustadt).—*Cure of Myxœdema following Operation by Feeding with the Thyroid Gland of the Sheep.* "Deutsche Med. Woch.," 1895, No. 7.

THE patient, twenty-seven years old, acquired myxœdema by operation upon a goitre three and a half years before. Since that time all the symptoms of myxœdema developed. Cure was obtained by the internal use of thyroid gland. *Michael.*

Buschan (Stettin).—*Criticism of the Modern Theories of the Pathogenesis of Basedow's Disease.* "Wiener Med. Woch.," 1894, No. 52; 1895, No. 1.

REVIEW.

Michael.

Hitschman (Wien). — *Contribution to the Casuistics of Basedow's (Graves') Disease.* "Wiener Klin. Woch.," 1894, Nos. 49 and 50.

REPORT of some cases without special interest.

Michael.

Lemke (Hamburg).—*Diagnosis and Treatment of Basedow's (Graves') Disease.* "Deutsche Med. Woch.," 1894, No. 51.

THE author concludes that a patient is affected with Basedow's disease if there is delirium cordis and vibratory tremor. The other symptoms (exophthalmos and goitre) are consecutive, and only confirm the diagnosis. The cause of Basedow's disease is probably a pathological chemical change in the secretion of the thyroid gland. *Michael.*

Schaffer.—*Critical Remarks upon some New Papers on the Thymus Gland.* "Internat. Monats. für Anat. und Physiol.," 1894, No. 3.

THE critical remarks prove that the so-called asthma thymicum does not exist, and that sudden death from sudden swelling of the thymus gland never occurs.

Michael.

Hildebrand (Göttingen).—*Congenital Epithelial Cysts and Fistulas of the Neck.* "Langenbeck's Archiv," Band 49, Heft 1.

REPORT of thirty cases observed in the clinic of Göttingen. Must be seen in the original. *Michael.*

E A R S.

Bezold, F. (Münich).—*Investigations concerning the Average Hearing Power of the Aged.* "Arch. of Otol.," Vol. XXIII., No. 3.

A LARGE number of people above fifty, classed according to the decades fifty to sixty, sixty to seventy, seventy and upwards, were examined by means of whispered voice and otoscopy in all cases; the tuning-fork in some. From the curve formed on a chart it could be seen that in each of these decades there is not only a successive decrease in the number of those with nearly normal hearing, but also a

successive increase in the degree of deafness. The less extreme degrees of deafness were more frequent in old men, but the extreme degrees in old women. The visible anomalies due to Eustachian disease—such as prominence of the posterior fold, broadening of the manubrium, projection of the short process, pushing of the light-spot toward the periphery, reflex above the short process—were the most usual abnormalities in the young, whereas there were more frequently found in old persons diffuse cloudiness of the drum, circumscribed opacities, posterior stripe opacities, calcification, scars and perforations. Tests for bone-conduction showed that in age the middle-ear affections are less frequent as compared to internal ear troubles. Among sixty, with a reduction of hearing distance to one mètre and less—

In 29 Rinne was positive, + 15 seconds or more.

„ 19 „ „ „ + under 15 seconds.

„ 5 „ „ + 0.

„ 7 „ „ negative—i.e., $BC > AC$.

The statistics showed that in old age bone-conduction in itself does not experience a reduction, but sinks proportionately with the lessening of the hearing distance—i.e., with the diminution of air-conduction. *Dundas Grant.*

Alderton, H. A. (Brooklyn).—*Investigations with Tuning-Forks of Middle Register in over Six Hundred Cases.* “Arch. of Otol.,” Vol. XXIII., No. 3.

THE author investigated thirty-six persons with normal hearing, and over six hundred with the various forms of aural disease, by means of Hartmann's series of five tuning-forks, ranging at intervals of one octave from C with 128 to C^{IV} with 2048 double vibrations per second. He gives elaborate but clear tables of the results of these tests in cases classified according to their nature, and according to the effects produced by treatment, affording thus important diagnostic and prognostic data. The conclusions derived from these observations are:—

1. Intensity or duration Rinne showing bone-conduction to be greater than air-conduction ($BC > AC$) or equal to it ($BC = AC$), always indicates some middle-ear disease, either alone or as a complication.

2. In any peripheral disease sufficient to produce any degree of deafness, intensity Rinne $BC > AC$ or $BC = AC$ will be found to exist if a low enough fork be used in the testing, providing the internal ear is normal, or nearly so.

3. The duration of BC is increased over the normal in affections of the sound-conducting apparatus, except for the highest notes (C^{IV} and over); the explanation of this exception existing in the fact that the sound-conducting apparatus is not concerned in the transmission of high notes.

4. In affections of the sound-conducting apparatus, sounds of a low pitch are poorly heard by AC , while high-pitched sounds are relatively well perceived.

5. The higher up the scale of forks the intensity negative Rinne travels, the greater the degree of sound obstruction existing in the sound-conducting apparatus, as a rule.

6. The increase of bone-conduction is not to be explained by Steinbrügge's theory of hyperæsthesia of the nerve.

7. Any profound or prolonged middle-ear affection ultimately affects the labyrinth secondarily.

8. Curtailment of the duration of BC to any extent indicates the presence of some internal ear disease, either alone or as a complication.

9. “Intensity” Rinne's (as we practise it) and Schwabach's (absolute duration of BC) tests combined furnish more valuable assistance than “duration” Rinne or Weber's test.

10. When the entire series of tuning-forks is used it is not necessary to adopt any arbitrary whisper limit [Lucae's.—D. G.].

11. It is possible to have $BC > AC$ or $= AC$ with a higher fork, even with the next lower giving $AC > BC$.

12. The prognosis cannot be certainly established on these tests beyond the fact that when negative Rinne has climbed up to the CIV. fork not much, as a rule, can be hoped for through treatment.

13. Duration of BC becomes almost or quite normal when normal conditions are restored.

14. A good deal may be founded on results obtained by means of two forks—the C' 32-64 V. or Dench's 26-64 V. clamped fork for Rinne's test, and the C¹¹¹ 1024 V. to determine absolute BC .

15. Possibilities of error are best avoided by employing the whole series.

16. The apparent exceptions to the above conclusions may possibly be explained by further investigation, the writer still pursuing his experiments.

[In the conflict between credulity and scepticism in regard to the value of tuning-fork tests, this solid and laborious contribution is most welcome and encouraging.]

Dundas Grant.

Dunn, J. (Richmond, U.S.A.).—*A Case of Otitis Hæmorrhagica Externa*. "Arch. of Otol.," Vol. XXIII., No. 3.

A MIDDLE-AGED man, previously affected with chronic middle-ear catarrh, was seized with pain in the left ear. After a few hours something burst, and there was a discharge of blood from the ear. On inspection there were found large and small hæmorrhagic bullæ on the membrane (whose features were quite obliterated) and on the lining of the osseous meatus. Relief followed the discharge, the opposite ear appearing quite normal. This one, however, went through a similar attack a few hours later, but in a less severe form. In a week the ears were in the same condition as previously. There was some lowering of the hearing while it lasted. He considers Politzer's account of the affection more precise than Gruber's.

Dundas Grant.

Randall, R. A. (Philadelphia).—*Bilateral Hematoma of the Lobule*. "Arch. of Otol.," Vol. XXIII., No. 3.

THIS occurred in a young girl whose ears had been recently pierced, and who was subject to epilepsy, traction on the lobules or the ear-rings having been practised for the purpose of rousing her from one of her fits.

Dundas Grant.

Zwaardemaker, H. (Utrecht).—*The Presbycusis Law*. "Arch. of Otol.," Vol. XXIII., No. 3.

EXAMINATIONS were made of the upper limits of audition in two hundred and nineteen normally hearing persons of all ages (hearing whispered voice at ten mètres). The upper limit in childhood was found to be e^7 , decreasing in age to a^6 or g^6 . Anything below this, in age, was to be attributed to disease, and not to senility. He attributes some deviations from his results to the use of the numbers on Galton's whistle instead of the actual pitch, and to variations in different specimens of the instrument.

Dundas Grant.

Moos, S. (Heidelberg).—*A hitherto undescribed Course of a Disease of the Mastoid Process*. "Arch. of Otol.," Vol. XXIII., No. 3.

THIS depended on the persistence of the mastoid (squamo-mastoid) fissure in an adult who had suffered from scarlatinal otitis in childhood. After influenza, he

was affected with acute suppurative otitis, leading rapidly to the formation of an abscess over the mastoid, which fluctuated considerably in size, pressure over it causing profuse otorrhoea. No pus was found on opening the mastoid, but four days afterwards there was an abundant discharge from the meatus.

Prof. Moos examined a large number of temporal bones, of which the particulars, as regards the fissure, are appended to the report of this case. The suture, according to Kirchner, remains complete during the first year of life only. *Dundas Grant.*

Dunn, J. (Richmond, U.S.A.)—*A Case of Basal Fracture.* "Arch. of Otol.," Vol. XXIII., No. 3.

A CASE in which a severe blow on the right temporal region caused unconsciousness for half an hour, paralysis of the fifth and facial nerves of that side, and very soon also of the sixth. The cornea underwent ulceration, and great discomfort was occasioned by the inability to locate particles of food in the mouth. The auditory nerve was unaffected. A fracture seems, therefore, to have occurred at the apex of the petrous bone internal to the internal auditory meatus, extending across the foramen lacerum medium. *Dundas Grant.*

Hartmann, A. (Berlin).—*Historical Remarks upon the Operation for Exposing the Tympanic Cupola-Space (Attic) and the Mastoid Antrum.* "Arch. of Otol.," Vol. XXIV., No. 1.

KÜSTER and Von Bergmann are credited with the earliest important enunciation of the principles of ample clearance and free drainage in the cases discussed. Hartmann considers that their methods did not sufficiently safeguard the facial nerve. He refers to the measurements made by him and published in 1890—now pretty well known—in which the conclusion is arrived at that if we chisel through the posterior wall into the tympanum the facial or semicircular canal may be injured if our chiselling is carried from one to four millimètres behind the sulcus tympanicus. He insists that in many cases a permanent cure may be effected without elaborate chiselling operations by the use of the tympanic canula, the removal of granulations with the curette, the extraction of the ossicles, and in some cases by removing a portion of Rivini's segment with the "forceps-chisel" (Politzer's or Gellé's). *Dundas Grant.*

Murray, R. W. (Liverpool).—*Three Cases of Intracranial Abscess; Recovery in each case.* "Brit. Med. Journ.," Jan. 5, 1895.

TWO of these cases developed abscess, consequent on ear disease. The first, a temporo-sphenoidal abscess, took place in a nine-and-a-half-year-old female child, after an acute left otitis four weeks before. Headache, fits, left squint and dilated left pupil, and right facial paralysis occurred. Double optic neuritis, more marked in left eye, was detected. Just previous to operation, pulse 48, respirations 8. Incision, curved and coextensive with left squamous suture, was made, and disc of bone removed three-quarters of an inch above the external auditory meatus. Dura bulged, but did not pulsate. When the dura was divided the brain protruded. A tenotomy knife found pus half an inch deep with brain tissue, to the extent of three and a half ounces. Recovery. Two weeks later the mastoid autrum was opened and curetted.

In the next case a cerebellar abscess was that of an eleven-year-old-boy, who three weeks before began to suffer from pain and discharge from the right ear. Headache, vomiting, double optic neuritis were present, and a painful swelling over the right mastoid. A subperiosteal abscess was opened over the right mastoid, but patient grew worse, and swelling occurred over the right internal jugular vein. The mastoid was now opened, and found to contain offensive pus and granulation

tissue. On passing to open right sigmoid sinus, an extradural abscess was opened. The sinus appeared collapsed and thrombosed, but was not opened. Still the boy did not improve. The cerebellum was now exposed by nibbling away the bone from the seat of former incision, and on passing in a probe through the protruding brain tissue four to six drachms of pus was evacuated. Recovery.

Wm. Robertson.

Knapp, Hermann (New York).—*A Case of Otitic Brain Abscess (Chronic Otorrhœa, Optic Neuritis, Homonymous Hemianopsia; Opening of Mastoid and Skull; Cerebral Hernia; Recovery).* "Arch. of Otol.," Vol. XXIII., No. 3.

A GIRL, aged nine, who had suffered from long-standing otorrhœa of the left ear, had for several weeks had copious and offensive discharge, severe headache, and some dizziness. The temperature ranged from 98·4 to 101. There was choked optic disc and loss of the right half of the field of vision of both eyes. There was no mental trouble present, but a few weeks previously there had been a defect of memory, and there was no constipation. The right homonymous hemianopsia indicated a lesion in the optic radiation, or somewhere between the chiasma and the visual centre on the left side. The mastoid was freely chiselled away; the skull was trephined above and behind the meatus. The dura looked normal and pulsated. It was then opened, a hypodermic syringe was introduced, and pus was drawn off. In a few days a hernia cerebri formed, but it was carefully dressed, and after six weeks it began to get smaller, the skin crept over it, and it was drawn back into the cranium. The optic neuritis disappeared, the hemianopsia remaining. In other respects recovery was perfect. *Dundas Grant.*

REVIEWS.

Hovell.—*A Treatise on the Diseases of the Ear, including the Anatomy and Physiology of the Organ, together with the Treatment of the Affections of the Nose and Pharynx which conduce to Aural Disease.* By T. MARK HOVELL, F.R.C.S. Edin., M.R.C.S. Eng. London: J. and R. Churchill. 1894.

THE author in this treatise appeals chiefly to those specially interested in aural work, and accordingly the volume before us is somewhat more extensive than those usually emanating from purely home sources. The general plan of the book is that ordinarily adopted. Reserving a description of the internal ear until that portion is considered pathologically, he first takes up the anatomy and physiology of the remaining parts. The treatment of this section reflects the utmost credit on the author. A thorough knowledge of the literature is displayed, and an ample description embodied in a way that is at once clear and concise, without being too detailed. Schwalbe especially has been consulted in this connection.

Next are found full directions for a general and special examination of patients, followed in turn by a chapter on methods of treatment. Beginning the special part with malformations of the auricle and external meatus, each succeeding region is systematically taken up until the work is brought to an end by a consideration of ear disease in life insurance,

and simulated deafness. As befits the importance of the nose, nasopharynx and pharynx, in their bearing on aural work, a long chapter—incorporated before diseases of the middle ear—is devoted to these regions.

Under directions for examination, we have the different points carefully detailed. The importance of thoroughly disinfecting Eustachian catheters is rightly emphasized, and useful hints given for a special form in specific cases. Valsalva's and Politzer's method, and the use of the Eustachian catheter, are fully discussed ; a caution being given against allowing Valsalva's method to be exercised by those in whom disease of the cerebral vessels is suspected. We think, however, the Eustachian catheter, as a means of treatment in children, deserves a higher position than Mr. Hovell is here inclined to give it.

The chapter on methods of treatment we must look on as being somewhat curtailed. Certainly, several points naturally falling under this heading are noticed at other parts, but we should at least have a reference made to them here. It would have been well also, in mentioning warm poultices, had the caution given elsewhere as to the possible dangers arising from such been stated.

The diseases of the external ear occupy several chapters, and are dealt with in a way which leaves little to be desired. We heartily concur in that "mercury should be given in *all* cases of syphilis, irrespective of the stage, and that iodide of potassium should be given in "addition as long as the so-called secondary symptoms are present, and "in the later stages of the disease."

Catarrhs of the nose and naso-pharynx might have received a somewhat more definite description.

Hypertrophied tonsils and adenoid vegetations are taken up in a fresh and interesting manner. Mr. Hovell prefers to remove the tonsils when the patient is not under a general anæsthetic, and points out the difficulties arising in children from the local application of cocaine in such cases. He holds that a general anæsthetic should be used in the removal of adenoids in children and discusses the subject fully, both as regards the choice of an anæsthetic and the manner of its administration ; his views being strengthened on this by suggestions from Dr. Frederic Hewett. Ether is given in preference to chloroform ; but where circumstances permit, nitrous oxide should be first given, then ether, and then chloroform. In the removal of adenoids he deprecates the use of scraping instruments, holds that ring knives are inadequate, and advocates the use of cutting forceps, especially in the form as modified by himself. In operating, the patient is placed lying on his back, with a small pillow under the neck, and the occiput resting on the flat of the couch. This departure from the usual practice of having the head depending over the end of the table he justifies by affirming that the danger from blood getting into the trachea has been exaggerated, that less hæmorrhage takes place in this than in the dependent position, and that any hæmorrhage can be met by sponging.

However well Mr. Hovell may argue his case, many will be inclined to join issue with him on some of these points. The curette may not be suitable under all circumstances, and particularly in those cases where

cutting forceps can be used with advantage ; but nevertheless it plays a necessary part in the removal of such growths, whilst having the patient at least so placed that the head can be instantly thrown well back if required adds greatly to the operator's peace of mind.

An open mind is retained as to the part played by micro-organisms in causing and maintaining inflammation of the middle ear, and a summary given of the more recent investigations on the subject. In considering those inflammations the naso-pharynx and Eustachian tube are very rightly kept constantly in view. The Eustachian bougie is condemned. Under sclerosis of the middle ear we have carefully placed before us the different forms of treatment in vogue, with reliable information as to the results which may be expected. At this part we should, however, have been glad of an expression on the value of fluid remedies injected by the Eustachian catheter.

An admirable chapter is given on mastoid affections.

A summary of the views of Schwartz and Politzer on the indications which call for or justify an operation in that region is incorporated, and their directions for operating, together with those of Barker, are fully given. The important difference between mastoid inflammation following acute suppuration of the middle ear and that arising from a chronic process is prominently brought before us. Greater stress, however, might have been placed on the bearing which this difference has on the prognosis.

A like degree of excellence is maintained in dealing with cranial and other complications of middle-ear suppuration, thrombo-phlebitis of the lateral sinus and jugular vein receiving special attention. The different affections of the internal ear are amply considered. The more recent views of the effects of influenza on aural troubles are recorded, whilst a short but clear chapter is devoted to electricity.

The paper is good and the typography is clear and remarkably free from errors. The illustrations, however, outside the anatomical section are chiefly those of instruments. The work justifies and realizes the author's aims. It will be found a valuable and exhaustive treatise by those interested in the subject, containing as it does in a comprehensive form the experience and methods of the author, together with what is most reliable as regards established and recent views.

Robert Fullerton.

Schiermayer (Hanover).—*Die Diphtherie, ihr Wesen, Ursache und Bekämpfung, mit Berücksichtigung der Therapie, und besonders der Serumtherapie (Antitoxin Behandlung) nach Entwicklung, Verwerthung, Brauchbarkeit, Erfolgen und Aussichten derselben dargestellt. Anhang sowie die Thesen der verschiedenen Nationen über Diphtherie eingebracht auf dem Congress von 1894.* ("Diphtheria ; its Nature, Cause and Prevention, with regard to Treatment, especially Serum Treatment (Antitoxin Treatment) ; Development, Use, and Results." With an Appendix, containing the Opinions of the various Nations on Diphtheria, produced at the Congress of 1894.) Leipzig. Verlag des Reichsmedicinal-anzeigers. B. KONEGEN. 1895. 1p. 131.

THE last few months have produced many books reviewing the treatment of diphtheria. One of the best is this *brochure*, which reviews the

literature in a very extensive manner, and all those questions which are just now the centre of interest. The work begins with statistical reviews ; then follow pathological anatomy, etiology with special regard to the present standard of bacteriology, the disinfection of the disease in men and animals, and the bacteriological diagnosis. As to the methods recently applied, the author concludes with Henoch's words, who said that he became a Nihilist as to treatment after having tried all internal and external means recommended. The next part of the book contains an exact description of the blood-serum treatment, well known to our readers from the many publications upon it ; its theory and practice. Then follows a review of the results of the treatment with Behring's and Aronsohn's anti-toxin. The last and most interesting chapter contains a comparative review of the statistics of diphtheria, which proves that there exists no difference between the results of serum treatment and those of other treatments, and which proves that other treatments give quite as good results as the serum treatment, and that the average proportion for twenty years gives seventy-four per cent. of cures without, and fifty-one per cent. with operation. The difference in the percentage of cures of such cases treated on the first day is the same in all methods of treatment. Compared with the results of Pasteur in rabies—*i.e.*, a diminution of mortality from eighty to ten per cent. to 1.39 per cent.—we may say that the serum treatment marks no advance. The author concludes with some hygienic remarks and a review of the literature of the subject, and a reprint of the conclusions of the various committees of the International Hygienic Congress.

Michael.

Burger (Amsterdam).—*Empyema of the Antrum of Highmore*. ("Volkmann's Klinische Vorträge," No. 111). Leipzig: Breitkopf und Härtel, 24 pages.

CLINICAL lecture on diseases of the antrum of Highmore. The author reviews the symptoms of empyema, and the different methods of examination. Concerning illumination, he believes that a very important symptom consists in the patient having a subjective sensation of light in the eyes. The sign is more certain than the objective symptoms observed by the surgeon. Sometimes percussion gives useful results. The remarks on probe irrigation and differential diagnosis contain nothing new to the specialist, but the lecture may be recommended, especially to the practical physician, because it is one of the best written reviews on this subject.

Michael.

Johann Schnitzler.—*Klinischer Atlas der Laryngologie und Rhinologie* ("Clinical Atlas of Laryngology and Rhinology"), with collaboration of Dr. M. HAJEK and Dr. A. SCHNITZLER. Seventh (concluding) part, with 32 figures on 4 chromo-lithographic tables, and 22 woodcuts in the text. Wien und Leipzig: Braumüller, 1895.

THIS last part contains in table XXV. interesting reproductions of laryngeal cancers, continued on table XXVI. On table XXVII. we find also the details of the well-known case of Schnitzler, treated intralaryngeally by galvano-cautery in 1867 (still living and cured in 1889) ; a case of multiple sarcomata of the larynx and trachea, observed in 1889, treated by laryngo-fissure and enucleation (not yet recurred, 1894) ;

compression of the trachea, retro-pharyngeal struma. The last plate exhibits the diverse forms of laryngeal paralysis. The whole work, as to the illustrations, was already finished when the author's laborious life was abruptly ended, and his son and son-in-law have in a pious manner added the necessary text, using the author's notes. The chapter on tuberculosis is written by the late author himself. The work will be to specialists a memento of its author.

Michael.

Jacobson.—*Lehrbuch der Ohrenheilkunde für Aerzte und Studirende, von Dr. L. JACOBSON, Privatdocent und Ohren-Arzt in Berlin, mit 318 Abbildungen auf Tafeln.* ("Text Book of Otology for Practitioners and Students," by Dr. L. Jacobson, Berlin, with 318 Illustrations on 20 Plates).

THOSE who have the advantage of being able to read German will find in Dr. Jacobson's work a clear and exhaustive review of what is known in otology. If any are inclined to minimize the importance of a knowledge of the nature, course and treatment of diseases of the ear, they have only to peruse his vigorous introduction, in which he directs attention to the *frequency*, the *dangers*, and the *necessity for early recognition* of affections of this organ, appealing not merely to the specialist, but in addition—perhaps doubly—to the general practitioner. The anatomy is considered in a short chapter, printed in an almost apologetic small type. The methods of examination are conveyed with that fulness without which the untaught cannot grasp the necessary details, even at the expense of an inevitable degree of wearisomeness. Dr. Jacobson brings a wholesome degree of scepticism to bear upon the results of tuning-fork tests, and his views on the subject are worthy of careful study. We think he goes too far when declaring his readiness to lay them aside altogether, because they only afford a diagnosis of probability not of certainty, a not uncommon feature of methods of examination in other branches of medicine, where it is not considered a sufficient ground for their rejection. He points out how they may be misleading, and no doubt with truth, but if we recognize the various sources of fallacy, and depend only on well-marked differences, we should surely err extremely if we omitted to record the results of these tests in every case, even if according them only a limited value. Few will be inclined to follow him when he goes still further, and refuses to attribute any importance to *post-mortem* anatomical investigation in cases of diseases producing deafness. Here he protests too much. This is the one sure foundation, which is limited on account of the difficulties attending its construction, not certainly from a disposition to minimize its value. It is to be hoped that the following up of cases, as has been done by Bezold in a small number, will be prosecuted with more rather than with less energy in face of this vigorous and far from insignificant indictment. The possession of these views does not prevent the writer from giving one of the clearest descriptions of the various tests with which we are acquainted, many blanks to be found in other works being here filled in.

The spirit of exhaustiveness pervades equally the rest of this work. A chapter is devoted to the minute description of the details of the various therapeutical means employed in the treatment of the ear.

including among other points the disinfection of instruments, syringing through the meatus and through the Eustachian tube (though without reference to the inner tympanic catheter), inflation, suction, the introduction of fluids, vapours, and powders, cauterization, depletion, application of cold and of heat, the use of electricity, local anæsthesia, paracentesis, section of the posterior fold, tenotomy of the tensor, operations on the membrane and ossicles, use of Lucae's spring pressure probe, mobilization of the stapes, diet and regimen, therapeusis of subjective noises, diaphoretic treatment, especially by means of pilocarpin, and the use of hearing-apparatus. In these sections the various precautions are given with the utmost fulness, and there can be few who would read them without acquiring one or more useful "wrinkles." These greatly facilitate the condensation of the paragraphs on treatment in the sections on the various diseases, and save much repetition.

In discussing the diseases of the different parts of the organs of hearing Dr. Jacobson follows the conventional order, treating each with his characteristic thoroughness and giving first his own views in each instance, following with those of the chief German authorities, Schwartz, Politzer, Urbantschitsch, Bezold, Lucae, and others. The work is thus a very complete reflex of the position of otological knowledge in Germany.

Where so much has been massed together and so exhaustively detailed the reader is apt to lose the sense of proportion in regard to the relative importance of the different parts, and to rectify this a most studied use has been made of the various forms of type. It is, however, unfortunate that the text has not interspersed through it the many excellent illustrations which are collected at the end of the book, and which would otherwise have formed such valuable landmarks for the student and would have so greatly lightened the labours of the reviewer. Figures in the text enable the reader to identify passages and to refresh his memory of the contents by a simple feuilletage after having once read them.

We would direct special attention to the chapter on the dangerous sequelæ of suppurative otitis, and above all to the one dealing with the relation of diseases of the ear to those of the system generally. Constant reference is made to other authorities, but by name only, so that no aid is afforded in finding the title or locality of the original work. With this addition, Dr. Jacobson's book might be called a cyclopædia of otology. It is almost too extensive for the purposes of a student's manual, but as an exhaustive work of reference it must be procured by every specialist.

Dundas Grant.

Harke (Hamburg).—*Beiträge zur Pathologie und Therapie der oberen Luftwege, einschliesslich des Gehörs. Auf Grund von Beobachtungen am Lebenden und an der Leiche.* ("Contribution to Pathology and Treatment of the Upper Air-Passages, including the Ear, founded on Observations made upon Patients and Cadavers.") Wiesbaden: Bergmann, 1895, 104 pages.

THE author published some years ago a method of dissection of the nasal cavities, the accessory cavities, and the aural organs. By this method he has examined four hundred cadavers. A description of this method

given in the "Berliner Klinische Wochenschrift," 1892, No. 30, is referred to in this Journal. Swelling of the nasal mucous membrane is often caused by mouth-breathing. By application of Feldbausch's nasal dilator, such swellings, often only produced by hyperæmia, are cured without any other medication. The mastoid cells are often diseased, discoloured, and filled with mucus or purulent contents. The antrum of Highmore and mastoid cells are more often diseased in children than in adults, so that in these cases a propagation of the nasal and aural diseases seems probable. The author believes that by the usual methods of blowing the nose infectious material can enter the mucous membrane of the accessory cavities, and produce infections here. In the same manner, Politzer's air douche and, though not to so high a degree, catheterism may conduct infectious material to the accessory cavities. The author, therefore, prefers in cases of perforation of the membrana tympani to apply Siegle's pneumatic ear speculum to remove the pus. The author believes that the foramina accessoria of the nasal wall of the upper jaw are secondary formations, and are formed when the natural hole is obstructed by hypertrophic mucous membrane. Protrusion of the wall itself the author only saw when there were tumours; never in cases of fluid in the sinus. Vegetations in the nose and adenoid vegetations of the pharynx vault are caused by irritation, and very often by suppuration of the accessory cavities. Relation to carious teeth can only be found in few cases of empyemata of the antrum of Highmore. The second part of the book contains the notes of the most interesting of the author's four hundred examinations.

Michael.

Seiffert and Kahn (Würzburg).—*Atlas of the Histopathology of the Nose, Mouth, Pharynx and Larynx*. ("Atlas der Histopathologie der Nase, der Mundrachenhöhle und des Kehlkopfs.") Containing 77 figures and 40 chromo-lithographic plates, with 8 woodcuts in the text. Wiesbaden: Bergmann, 1895.

NOT all who are specialists in nasal and laryngeal work have the time and the ability to conduct exact pathologico-anatomical researches. To these such a work will be welcome, in which may be found the histology of all those diseases which he meets with in practice. For those who themselves make histological examinations the illustrations will give much pleasure, from their elegant and exact reproduction, and the careful selection of the individual specimens. Beginning with figures of the normal nasal mucous membrane, the authors follow the various forms of inflammation of the nose, and ozaena (tables 2-6). Tables 7-10 are dedicated to the different forms of fibroma œdematosum (usually called mucous polypi). Table 11 describes a variation, the fibro-angioma nasi; tables 12, 13, 14, other benign neoplasms of the nose; table 15, tuberculosis; tables 16-20, malignant neoplasms. Of these table 19 is of special interest, figuring the specimens of melano-sarcoma only observed four times (the specimen is from the reviewer's case). Table 21 deals with the hypertrophic pharyngeal tonsil, and a very rare case of teratoma pharyngis; the specimen shows epidermis, corium, tela subcutanea, and hairs of the so-called hairy polypi. Tables 22 and 23 show hypertrophied palates and lingual tonsils. Table 24 contains a pseudo-papilloma of the tongue and an

adenoid polypus of the soft palate ; table 25, benign neoplasms of the soft palate ; table 26, granular pharyngitis and *leptothrix buccalis* ; table 27, an angioma cavernosum of the tongue ; table 28, specimens of macroglossia and of rhinoscleroma, the latter specially instructive because of the localization of the bacilli on the tissue, which is very clear. Table 29 shows tuberculosis of the pharynx ; table 30, an instructive case of leucoplakia buccalis and a cancer of the tongue ; table 31, a sarcoma of the tongue and a lympho-sarcoma of the tonsil. On tables 32-34 we find very fine reproductions of benign neoplasms of the larynx ; table 35 gives clear pictures of pachydermia and of tuberculosis ; tables 36 and 37 treat of cancer and sarcoma of the larynx ; table 38 is dedicated to lepra (here also, as in the specimen of rhinoscleroma, a specimen is selected which shows the distribution of the bacilli in the tissue around the cells in a very clear manner). Table 39 contains a case of laryngeal syphilis, and gives a copy of the normal mucous membrane of the trachea. Table 40 concludes the work with two very rare neoplasms of the trachea—a papilloma (Seigert's case) and an osteoma (Dennig's case).

The text explains the illustrations in a very clear and concise manner.

Both from a scientific and artistic point of view it is an excellent work of the first rank. The publisher has done his best to support the authors by most excellent work and faultless execution of the figures, and selection of the best paper.

Michael.

OIL-COLOUR PAINTINGS OF MORBID APPEARANCES IN THE NOSE AND THROAT.

By Dr. HENNIG (Berlin).

A SERIES of large paintings in oil, representing more or less typical cases of disease of the nose, pharynx, and larynx, by Dr. Hennig (Berlin), was recently exhibited before the Laryngological Society of London by the President. The paintings possessed very considerable artistic merit, and the whole work did the greatest credit to the enthusiasm and industry of the painter. Criticisms and suggestions were specially requested, and, it is needless to say, these were freely offered. The absence of certain typical pictures, common in tuberculosis of the larynx, was commented on, and other less important omissions were pointed out as calling for correction.

It is understood that Dr. Hennig is anxious to make the series as complete as possible for educational purposes, regardless of the time and trouble involved. When this end is attained, he hopes to find a sufficient number of subscriptions to cover the cost of reproduction by chromo-lithography. This would hardly appeal to individual workers, but we would strongly recommend the acquisition of the work by every institution where laryngology and rhinology are taught. To allow this scheme to lapse would be to lose an important aid to the advance of these sciences. The paintings, as they at present stand, have been on view in the rooms of the Royal Medical and Chirurgical Society in Hanover Square.

HANDBOOK OF LARYNGOLOGY AND RHINOLOGY.

WITH great pleasure I announce to my specialist colleagues that the following writers will collaborate in the production of a Handbook of Laryngology and Rhinology, to be edited by the subscriber :—Dr. BERGENGRUN (Riga); Geheimrath VON BERGMANN (Berlin); Dr. BLOCH (Freiburg-i-B.); Prof. P. BRUNS (Tübingen); Prof. CHIARI (Wien); Prof. DISSE (Halle-a-S.); Prof. EWALD (Strassburg); Prof. B. FRAENKEL (Berlin); Dr. E. FRAENKEL (Hamburg); Prof. GAULE (Zürich); Dr. GERBER (Königsberg-i-Pr.); Prof. GERHARDT (Berlin); Dr. HAJEK (Wien); Dr. HOPMAN (Köln); Prof. JURASZ (Heidelberg); Dr. KAYSER (Breslau); Prof. KILLIAN (Freiburg); Dr. KLEMPERER (Strassburg); Dr. KRIEG (Stuttgart); Dr. KRONENBERG (Solingen); Dr. LANDGRAF (Berlin); Dr. VICTOR LANGE (Copenhagen); Dr. MICHAEL (Hamburg); Prof. MIKULICZ (Breslau); Dr. ONODI (Pest); Prof. PINIACZEK (Krakau); Dr. A. ROSENBERG (Berlin); Dr. SCHAFFER (Bremen); Prof. SCHIEFFERDECKER (Bonn); Prof. M. SCHMIDT (Frankfurt-a-M.); Prof. VON SCHROETTER (Wien); Dr. SEIFFERT (Würzburg); Prof. STOERK (Wien); Prof. STRUBING (Greifswald); Prof. R. WAGNER (Halle); Prof. ZUCKERKANDL (Wien).

The handbook will review the present standard of our knowledge. Literature will be regarded as completely as possible. I would therefore beg my specialist colleagues to send me separate reprints and catalogues of papers published by them. These will be forwarded to the authors of the individual chapters.

Dr. PAUL HEYMANN.

Potsdamerstrasse 131, Berlin, W.

ASSOCIATION AND SOCIETY MEETINGS.

SIXTY-SIXTH CONGRESS OF GERMAN NATURALISTS AND PHYSICIANS AT VIENNA.

SECTION OF OTOLOGY.—*continued.*

(*"Monatsschrift für Ohrenheilkunde."*)

26th September, 1894.—President, Prof. ZAUFAL.

Prof. GRADENIGO (Turin). *Partially-acquired Tone Deafness.*

Gradenigo communicated three new cases of partially-acquired tone deafness observed by him. In one of these the affection was congenital, or came on in early childhood. The second was one of neuritis of the acoustic nerve, probably the result of an intra-cranial gumma; and in the third there was probably a traumatic hæmorrhage into the cochlea.

Dr. GOMPERZ. *On the recognition of Protrusion of the Bulb of the Jugular Vein into the Tympanum during Life.*

Up to the present five cases of dangerous hæmorrhage, following

paracentesis of the membrane from perforation of the bulb of the jugular vein projecting into the tympanum, have been published by Gruber, Ludewig, Hildebrant, Seligmann, and A. Brieger, the last one ending fatally. For the prevention of this casualty the writer recommends careful inspection of the membrane before paracentesis, and he sets forth the symptoms of this anomaly in cases in which the membrane was not inflamed, founding his views upon observations made in this direction. Blue discolorations in the lower half of the drum membrane, which from their position, extent and colour have nothing in common with the shadow of the niche of the fenestra rotunda, are not uncommon. We find the blue spot either circular or bi-convex, always close to the lower periphery of the drum, the convexity extending upwards and forwards. Dr. Gompertz fully described two particularly marked cases, and he showed a boy whose membrane presented the type of picture produced by a projection of the jugular bulb into the drum. Finally he recommended for consideration whether, in view of the danger of penetrating the bulb in an inflamed or opaque membrane, paracentesis should be practised in the antero-inferior quadrant in a direction from behind forwards.

Prof. JOS. GRUBER remarked that, on the patient which the reader showed from his clinic in the first instance, paracentesis of the drum membrane had been made without the occurrence of bleeding, and it was only when the necessary paracentesis was performed for the second time that hæmorrhage occurred. He thought that if the blue discoloration had been present in the membrane in that case that he would probably have seen it; according to his opinion, the vessel which was penetrated lay deeper in the tympanum and could not be seen.

Dr. BRIEGER had also seen a case similar to the one described by Gompertz, only in his case the entire contour of the jugular bulb did not reach so far forward as the antero-inferior quadrant.

Prof. ZAUFAL thought that in cases of such hæmorrhage we ought not to be content with simply plugging as deep as the membrane. Small tampons ought to be pushed through the opening as far as the injured spot.

Prof. POLITZER had seen hæmorrhage into the drum after paracentesis of the membrane from perforation of the veins accompanying the nerve of Jacobson.

Dr. HABERMANN had seen dehiscence of the floor of the tympanum with projection of the jugular bulb, reaching as high as the horizontal semicircular canal, which also presented adhescence.

Dr. DELSTANCHE (Brussels). *Demonstration of Instruments.*

The first was an ingenious instrument (*Injecteur à répétition*) for the irrigation of the upper cavities of the tympanum, which had the advantage that it could be worked with one hand. The second an instrument of the nature of a *Ring Knife for the Extraction of the Malleus*, with which at the same time the tendon of the tensor tympani could be cut through. Thirdly, an *Instrument for the Extraction of the Incus*, and in addition a small *Instrument for the Extraction of Polyphi* from the external meatus, also a *masseur* for the progressive condensation and rarefaction of the air in the meatus, and a *Spiral Wool-holder* for plugging the ear

or the nose; an *Apparatus for the Air-tight Closure of the External Meatus*; finally, an *Air Bag* with a double valve for condensation of the air in the external meatus.

Dr. HARTMANN (Berlin) demonstrated the following :—

(a) His triangular, simple, and hydropathic *Ear Bandage*.

This consisted of a triangular piece of black calico with a loop at the superior angle and strings at the two inferior. The loop is laid upon the vertex; the anterior string below the jaw to the opposite side of the head, where it is passed through the loop and tied to the posterior string at the back of the head.

(b) *Photographic Wall Pictures* of a complete series of microscopical preparations from the ear in horizontal and vertical section.

(c) Various instruments.

Dr. O. BRIEGER. *On Otitic Abscess of the Brain*.

Dr. Brieger described, on the strength of some of his observations, the departures from the typical clinical pictures which were present in some cases of abscess of the brain, resulting from chronic suppuration of the middle ear, and he discussed in particular the significance of the ophthalmoscopic changes which took a singularly long time to disappear in a case under his care which was successfully treated. He dwelt further upon the value of the examination of the urine for peptone with a view to the recognition of intra-cranial suppuration, and he recommended puncture of the cerebro-spinal sac for the differential diagnosis between it and meningitis. He dwelt fully upon a case of healing of an abscess after spontaneous evacuation of the pus through a fistula in the superior wall of the external meatus where death took place later from sinus thrombosis, and the condition was verified by *post-mortem* examination. He described also a similar case in which permanent recovery took place.

Dr. SCHUBERT: There are two forms of neuritis of the optic nerve: (a) simple neuritis with capillary hyperæmia of the sheath of the optic nerve, and slight obscuration of the margin of the papilla. This form occurs with comparative frequency in otitis without necessarily being associated with intra-cranial complications. This is the form which is most frequently found in abscess of the brain. (b) Choked disc with considerable prominence of the papilla; this form is always associated with increase of intra-cranial pressure, and is very frequent in tumour of the brain, occurring as often as so many as two-thirds of all the cases observed up till death. It is only exceptionally that this form accompanies abscess of the brain, and on this account that the increase of pressure does not last so long, and is not so constant as in cases of tumour.

Prof. POLITZER often found abscesses of the brain follow an apyrexial course. He recalled several cases in which suddenly severe brain symptoms came on with fatal result, although the patient had had no other cerebral or general symptoms except a fixed headache which had lasted for a considerable time in a situation corresponding to that of the abscess. He attached great importance to this fixed pain in conjunction with other symptoms. He had also occasionally observed choked disc in cases of middle-ear inflammation not complicated with cerebral affection.

Dr. O. BRIEGER protested against the remark of Schubert's that he considered cure through spontaneous evacuation of the matter as an exceptional occurrence. He had seen in one case that the opening often closed and the abscess refilled. It would be necessary in such cases, when the communicating opening is found, to enlarge it so that there might be a lasting free exit for the pus.

Dr. REINHARD (Duisburg) remarked, with reference to the case of spontaneous recovery from otitic cerebral abscess described by the President, that he had watched one of the same kind for nearly six months in the aural clinic at Halle. This was a case of a boy of twelve years of age, suffering from chronic otorrhœa of the left ear and cerebral symptoms, in whom there was a suspicion of cerebral abscess, but the skull was trephined over the temporal lobe and over the cerebellum, with subsequent puncture and completely negative result. The boy died of general cachexia and final basal meningitis. On *post-mortem* examination there was found, in addition to these, a cavity of the size of a plum in the left cerebellar hemisphere, empty, but bounded by dirty yellow-coloured lining beset with ridges. In order to prevent misunderstanding, the speaker remarked that the cure here only concerned the local focus of pus—an observation which is certainly unique in the literature of the subject—but that the patient finally died from the results of his chronic otorrhœa.

Dr. ROLLER (Trier) mentioned a case of spontaneous healing of a cerebral abscess which he had dissected. Nothing was known of the previous history of the patient, except that at the end there was no acute illness. Anatomical inspection revealed a fistula in the neck, two osseous sequestra of the temporal bone, obliteration of the brain (!) and partial healing of the cavity of a cerebral abscess with connective tissue.

Prof. URBANTSCHITSCH mentioned a case of caries of the temporal bone in which the previous opening and scraping of the attic and antrum, which were filled with granulations, led after a few weeks to a decided improvement as regards the pain and fever which were present. Later there came on attacks of agraphia, and inability to make himself understood by speech, as the patient employed words which were quite unintelligible. In addition there came on spastic disturbances on the extremity of the right side. The attacks were transitory and varying in their severity. On section there was found extensive meningitis without a trace of an abscess in the left temporal bone. Obviously the symptoms were due to transitory œdema, such as Urbantschitsch had observed in a case of oscillating blindness and deafness in which the section revealed acute œdema of the brain.

Prof. GRUBER further took part in the discussion, relating a series of highly interesting cases. He had observed an abscess of the brain in the course of which deafness and blindness came on, and which emptied itself through the external meatus with very striking symptoms, and with the emission of a fœtor peculiar to abscess of the brain. He had further observed a case of cerebral abscess which came on without manifest symptoms on top of a healed suppurative middle-ear inflammation, and which a few months later, within a few days, led to death with the most violent manifestations. He further mentioned two cases diagnosed in

life in which he had opened the abscess with good result in so far as emptying of the abscess was concerned.

Dr. BARNIK mentioned a case of operative opening of a cerebral abscess following chronic suppuration in which half a spoonful of pus was removed and recovery followed.

September 27th.

Prof. GRUBER. *A Description of Rare and Interesting Cases.*

One of the most interesting of these was a case of extrusion of the left cochlea. He demonstrated by means of the tuning-fork and ear trumpet that there was still some perception of sound on that side, but this opinion was combated by Politzer, Gradenigo, and Scheibe.

Prof. GRUBER. *Demonstration of Specimens.*

(a) A case of *Congenital Malformation of both Ears* (microtia with absence of the meatus) in which the appearance of the auricle indicated that the cause was a twisting of the umbilical cord round the head, as was found at the time of birth.

(b) *An Auricular Appendix.*

On the auricle of the right side, at the point where the lower third of the helix joins the middle third, there was found a rudimentary second auricle situated on the posterior border of the helix and with a cartilaginous basis.

(c) An auricle of the right side with the antitragus enlarged to five times its natural size. This formed a strong flap about two centimètres in length with a cartilaginous foundation, and directed backwards and outwards. In the left ear there was a similar malformation, but less marked.

(d) The two auricles in a patient, aged twenty-five, in which the Darwinian process projected [upwards] to the extent of five and seven millimètres, being covered with normal cutis, and having a cartilaginous basis. According to Darwin's teaching, this condition should be looked upon as a result of atavism.

(e) A photograph of a child, aged five, who was born with a *Supernumerary Auricle* on the left side of the neck. As this appeared to be getting larger the parents wished it to be removed. The operation succeeded perfectly, and this auricle was dissected away along with a pedicle of about one centimètre in length, rooted deeply in the lateral cervical region. The wound healed in a few days without suppuration.

(f) Preparation with *Congenital Aperture in the Membrana Tympani* such as certainly comes very seldom under notice. This, combined with the circumstance that in the patient, along with other abnormalities in the pharynx, the orifice of the Eustachian tube was quite obliterated, must have been of considerable use, inasmuch as the ventilation of the tympanum was possible through this opening such as normally ought to take place by means of the Eustachian tube, a point of great importance with regard to the position and tension of the membrane and ossicles.

(g) Photographic picture of an extremely rare *Malformation of the Ear*, such as Gruber had only seen twice before. The patients showed,

in addition to the defective development of the organ of hearing, a congenital paralysis of the muscles of expression upon the same side, a circumstance to be attributed to defective development of the facial nerve. In both cases the auricle, which had the form of the so-called cat's ear, was situated lower than the normal one of the opposite side. The osseous meatus was absent, as could be made out on palpation. In both there was a loss of symmetry of the two halves of the face, and above the cat's ear there was a pronounced concavity bounded in front by the ascending ramus of the lower jaw, and behind by the mastoid process. In the patient, who was seen before, there was found to be complete deafness on the affected side, while in the more recent case the watch was not heard, as also the tuning-fork when held in front of the ear. On the other hand, Weber's test was positive. Tactile and gustatory sensibility were normal in both patients. In the first of them Gruber performed amputation in accordance with the wish of the patient, whereby the personal appearance was very much improved. Gruber attempted to make an artificial external meatus, but he had to give this up after reaching to the depth of one centimètre, because at this stage he found that the osseous parts were quite irregularly developed, and that further proceeding would have risked the life of the patient. A case which should be placed side by side with this was described by Moos and Steinbrügge. These observers found in the body of a child eleven months old, along with complete absence of the structures of the outer and middle ear, the Fallopian canal obliterated by means of bony material in its horizontal and descending parts. The speaker was in a position to demonstrate a similar condition in a dried preparation in his collection. He got the preparation already macerated from the body of an individual who was deaf on one side, and whose corresponding ear was malformed. The external meatus, the membrane, the tympanum, the ossicles with their muscles, as also the bony Eustachian tube, were completely wanting. The Fallopian canal presented itself as a curved canal crossing the long axis of the petrous bone, and ending on its lower surface behind the fenestra ovalis without any trace of the knee-shaped bend. The superior semicircular canal was present in its whole extent, starting from the vestibule and returning to it. The posterior and the inferior canals were present, but much shorter than normal.

Morning Sitting—Dr. SCHUBERT in the Chair.

Dr. REINHARD (Duisburg). *Körner's Method of Lining the Mastoid Cavity after Chiselling.*

Dr. Reinhard, at the request of the openers of the section, demonstrated Körner's experience of the formation of flaps from the posterior wall of the meatus, as presented at the meeting of the German Otological Society at Bonn in the year 1894. It consisted in this—that, after the opening of the middle ear by two parallel horizontal incisions in the posterior cuticular wall, a flap was formed, whose base was situated at the external auditory meatus. Körner continued these incisions outwards in the concha so far that thereby the external meatus was enlarged; the skin

wounds behind the ear were closed by means of sutures, and the flaps from the posterior wall of the meatus were fixed against the back wall of the osseous cavity from the meatus by means of tampons (the tongue of skin was pushed backwards into the large mastoid cavity so as to paper it).

Reinhard had since last Pentecost made use of the above method in two cases of circumscribed caries of the attic and of the antrum without cholesteatoma, and had been satisfied with the results in so far as, first, the patients had to wear bandages for only a short time, and were soon able to leave the hospital (sometimes within ten or fourteen days), and, secondly, that the after-treatment is easier owing to the increased width of the external meatus, and, thirdly, that from the cosmetic point of view this gives the most satisfactory result of any possible after the chiselling operation. Naturally the proper selection of cases is important. Those cases in which a persistent retro-auricular opening is to be striven for are excluded (cholesteatoma of the mastoid, extensive tubercle, caries, etc.). This method is suitable only for circumscribed caries of the ossicles and of the atticus and antrum, in which the opening of the cavities of the middle ear is necessary. With properly selected cases, Reinhard considers this operation as the nearest to the ideal method of opening the mastoid and carrying out the after-treatment.¹

Prof. POLITZER welcomed the members of the section to his clinic, and he brought forward for demonstration a large number of anatomical, pathological and microscopical preparations, as also some new ear instruments.

First : Demonstration of the preparation from the ears of patients who had died from *otitic cerebral abscess*.

Second : Preparations illustrating *morbid changes in the mastoid process*.

Third : Preparation with formation of *exostosis in the external meatus* with consecutive widening of the meatus and mastoid.

Fourth : *Preparations from congenital deaf-mutes*.

Fifth : *Calcareous deposits in the mucous membrane of the tympanum*.

Sixth : Magnified preparations showing *primary disease of the labyrinthine capsule*.

Seventh : *Preparations from the normal ear*.

Eighth : Proof sheets of a *chromo-lithographic atlas* of diseases of the membrane, at present in the press.

Ninth : *New instruments for the operative opening of the mastoid process*.

Prof. HABERMANN, in reference to Prof. Politzer's sixth presentation reminded the section of his own investigations upon similar changes in the bone, which he had conducted on eight temporal bones. He did not agree with Prof. Politzer in his explanation of its origin.

¹ On his return journey from Vienna to Halle, Reinhard heard that Körner's operation of enlarging the external meatus while making these flaps had already been practised in the Halle clinic. [Dr. Rudolf Panse's method of fixation of the flap by means of a stitch, as described by him a considerable time ago in the "Archiv für Ohrenheilk.," seems to us a very practical addition to the one described.—D G.] He saw there some extra wide ear specula which served for the inspection of the whole of the osseous cavity through the widened meatus.

Afternoon Sitting—Dr. ROHRER in the Chair.

Prof. URBANTSCHITSCH. *A Case of Acute Boiler Maker's Deafness.*

In order to prove whether there was not the additional effect of a spasm of accommodation of the internal muscles of the ear, such as he had observed in certain cases of telephone deafness, he had endeavoured in the case before him to practise rarefaction of the air in the external meatus, as also condensation of air in the middle meatus, so as to stretch the tensor tympani outwards. This was followed by a rapid decrease of the deafness. Urbantschitsch was able thereby to prove that the stretching of the tensor tympani of the one ear was able to bring about a favourable influence upon the other on account of the synergic movement of the two muscles. This improvement was proved by testing the hearing before and after the treatment.

Prof. POLITZER recalled an analogous observation of Dr. Delstanche's concerning a man in whom deafness came on through an explosion, and who was successfully treated by repeated rarefaction of air in the external meatus. Politzer thought that the improvement in hearing could be explained by this: that owing to the shock, the ligamentous apparatus had got strained and relaxed, and that by the rarefaction of the air in the external meatus the parts were again brought into their normal position.

Prof. URBANTSCHITSCH. *On the Influence of Methodical Hearing Exercises upon the Hearing Sense.*

The speaker had practised these exercises upon deaf-mutes, and in the subjects of deafness acquired in later years, especially in cases of nerve deafness. He discussed the mode of exercise and the oscillations in hearing power, and the inflammatory manifestations which took place during them, and, further, the distinction between acoustic and tactile sensibility. He mentioned, further, that he had frequently been able to prove a partial, apparently complete deafness as only a specially languid reaction to the exciting sonorous stimuli which was overcome by methodical hearing exercises. This methodical exercise had, according to Urbantschitsch, two objects—in the first place the extension and further development of auditory impressions; on the other hand the psychical education of the auditory sense, namely, the building up of a proper understanding of the hearing impressions when received. He discussed finally those cases which were suitable for exercises, and their duration and practical worth.

A demonstration of striking cases was then given by Urbantschitsch and Messrs. Lehfeld and Kühnelt, director and teacher respectively in institutions for deaf-mutes.

The President, Dr. ROHRER, thanked Prof. Urbantschitsch in the warmest manner for his highly interesting and important communication, as also the worthy men who had brought the institutions for deaf-mutes in Austria to so high a standard of perfection, and worked so worthily with the otologists for the benefit of those pitiable patients. It should be a

matter of great gratification to have learnt a new method which was of such benefit in the treatment of the severest kind of disease.

Drs. HARTMANN, DELSTANCHE and SCHEIBE expressed their lively recognition of the magnificent results relative to the speaking power of the absolutely deaf mutes.

Dr. SCHEIBE recommended the preliminary investigation of deaf-mutes with the continuous tone range devised by Bezold.

Dr. SZENES wished to refer to two points; on the one hand, the remarks made regarding methodical hearing exercises without the ear-trumpet corresponded exactly to his own experience, as cases of deaf-mutism where remains of hearing for speech were present could not be improved by means of any, and in a number of cases the hearing power was distinctly worse with them than without them. On the other hand, he should like to put the question as to how the curative value of the methodical exercises could be explained, especially from the point of view of pathological anatomy. Were there, in cases of deaf-mutism, pathological changes (ossifications, ankylosis, atrophy of the nerve, etc.) which for a long time have been established, and where any improvement, at least as regards the exhausted pathological process, was scarcely to be thought of? Did the reader think of a psychical effect?

Prof. POLITZER thought it was a pity that Prof. Urbantschitsch had not sufficiently defined the morbid anatomical aspect. The great number of deaf-mutes in whom there are present changes in the organs of hearing (about seventy per cent.) are excluded. From the congenital cases the psychical deafness of Heller, which certainly often occurs, is to be excluded. There were further also to be considered those congenital cases in which spontaneous improvement took place. Politzer thought that too great expectations should not be entertained with regard to these hearing exercises, of which the value had long been recognized. In many cases the improvement in hearing was again completely lost. As regards the hearing exercises in adult deaf people, Politzer mentioned that already some years previously Maloney, in Washington, had published papers upon the otacoustic treatment of such cases.

Dr. KAYSER (Breslau) remarked that the impression made upon him by this very important and interesting demonstration was that in the cases of minimal hearing faculty there was produced not so much an increase of hearing power as a bringing forward of the understanding. Under normal circumstances the ear is such a delicate apparatus that ordinary sonorous irritations so reach it as to be distinguished, and therefore understood. In the deaf, or at least in those with greatly diminished hearing power—corresponding to anatomical changes—the hearing apparatus is very dull to sensation, like a thermometer which only indicates whole degrees as compared with one which indicates the tenth part of a degree. The sonorous stimuli of ordinary life are not perceived by those having the minimum of hearing power, and very powerful stimuli occur only seldom, but if methodical exercises with these strong stimuli are carried out the minimal hearers distinguish them, and then learn to understand them. Perhaps then the sensibility to sound increases a little; in any case the methodical exercises devised

by Prof. Urbantschitsch are of great value, because they make the hearing apparatus, even if only very slightly sensitive, again useful, which would otherwise be of no value whatever.

Prof. URBANTSCHITSCH replied to Dr. Szenes that from the results of his hearing exercises he had found out how uncertain was the classification of the pathological conditions of the organ of hearing, as sometimes in cases which appear absolutely hopeless an improvement took place under these exercises, perhaps from exercising the remaining portion of the auditory nerve. He replied to Prof. Politzer that he had given every credit to those who had carried out similar methods. No case could be entirely excluded from the trial with these exercises, as even in those that appeared to be totally deaf results were sometimes obtained. The distinction between development of the hearing power and the opening up of ways for the understanding of sounds had also been referred to by him. The practical value of even a very slight improvement was very important for deaf-mutes, as the first impression of a new sensation was ordinarily very striking. Urbantschitsch finally stated that one of the cases demonstrated was known to Prof. Politzer, who would be able to observe the good result of the acoustic exercises.

Prof. POLITZER replied that the case brought forward by Prof. Urbantschitsch in no way spoke for the value of hearing exercises, as according to the notes on the case paper in the general hospital alluded to previously, deafness and improvement had alternated in this case.

Dr. O. BRIEGER had in a carefully observed case, analogous to that observed by Magnus, seen partial tone deafness disappear under methodical exercises in almost its whole extent. His own experiences were entirely in agreement with those of Urbantschitsch. He sees nothing very extraordinary that results should be obtained in this way when one considers how much may be obtained by systematic practice in organic disturbances of other kinds. We must naturally only expect good results when in general a functionally-active organ is still present, as experience can show us nothing more than the development and extension of the residua of hearing power still retained.

Dr. S. THOMKA (Vienna). *Case of Supernumerary Ossicles in the Human Tympanum.*

The membrane is perforated, the remains of it partially calcified, partially thickened and opaque. In the tympanum there is, in addition to the normal malleus incus joint, another osseous body which lies between the inner surface of the incus and the inner wall of the tympanum. Its surface is rather smooth, covered with mucous membrane, the colour almost the same as that of the other ossicles; there is no fibrous adhesion to prevent its free movement, a circumstance which excludes the idea that the accessory bone might be the result of an inflammatory process. It cannot either be looked upon as an ossification of Meckel's cartilage, because it does not lie in the fissure of Glaser, and the lenticular bone and handle of the malleus are perfectly well formed. The Eustachian tube and the labyrinth show no alteration.

Dr. A. SCHEIBE (Munich). *Demonstration of Anomalies of Formation in the Membranous Labyrinth, which were found similarly in the four Temporals of two Deaf-Mutes.*

The anomalies affected the membrane of Corti, and the stria vascularis. The condition would lead one to think of the possibility that Corti's membrane arose out of the stria vascularis, although hitherto in the history of the development nothing concerning this has been known. One of the two cases was published in the "Zeitschrift für Ohrenheilkunde" in 1891, and was illustrated with woodcuts.

Prof. KIRCHNER (Würzburg). *On the occurrence of Thrombosis of the Cavernous Sinus in Acute Purulent Inflammation of the Middle Ear.*

He drew attention to the clinical significance of some forms of acute suppurative median otitis, which, for a longer or shorter time, without giving any indications of retention of pus in the tympanum, led suddenly to thrombosis of the cavernous sinus. In such cases, which generally occurred in connection with a severe attack of grippe or influenza, paracentesis of the membrane ought always to be carried out early, and diffusion of the infected material inwards through the lymph and blood channels should be guarded against by the most thorough disinfection of the tympanic cavity.

Dr. HABERMANN mentioned that during the last epidemic of influenza he had frequently observed diseases of the internal ear, which generally got well with restoration of function. Only one, a child aged two years, remained deaf and became a deaf-mute.

Dr. ROHRER remarked, with regard to Prof. Kirchner's paper, that he had treated a case of influenzal otitis by means of paracentesis, and that for eight days he was able to make pure cultures of streptococcus pyogenes from the exudation.

September 28th. Afternoon Sitting—Prof. KIRCHNER in the Chair.

Dr. BING (Vienna). (a) *Experiments on the Irrigation of the Tympanic Cavity.*

He had carried out experimental irrigation with coloured fluids on the temporal bones of adult bodies in which the cartilagino-membranous portions of the Eustachian tube with the pharyngeal orifice had been carefully preserved. The membrana tympani was freely exposed, and in its lower half a small hole was made with a pin, or else a wide paracentesis cut was made, or a portion of the membrane was excised. The preparation was then held as in a vice, as far as possible in the natural condition. The coloured fluid was injected through a catheter placed in the tube, and its outflow into the meatus was observed. Then the tegmen tympani and the cortical covering of the mastoid was chiselled away, and the tympanic and mastoid cavities so laid open were examined. It was found that with a wide paracentesis cut or a large opening in the drum most of the fluid ran out, and no colouration was found either in the upper cavities of the tympanum or in the antrum, while with a small perforation opening in the drum less fluid came out into the

meatus--but, on the other hand, it could be found in abundance in the antrum and the mastoid cells. Bing concludes from this, with certain reservations :--

1. In the case of large openings in the drum, irrigation of the tympanum cannot quite achieve the intended object.

2. There is ample confirmation for the assertion that the outflow of injected fluid is sufficiently free, and easily effected through the opening in the drumhead.

(b) On the Treatment of Purulent Inflammation of the Middle Ear in which there is a small Perforation at the point of a Mammilliform Projection on the Drum.

He had recently treated some cases of this kind, which are known to run a complicated or at least protracted course, by means of a drop of liquor fer. sesquichlor. applied to the seat of the perforation by means of a probe. A rapid and favourable recovery followed. The medicament caused no particular reaction ; it exercised a powerful astringent effect, the otorrhœa ceased in a few days, the apertures quickly cicatrized, and under antiphlogistic and absorbent treatment perfect restoration took place. He wished to recommend this plan of treatment for further trial.

Dr. GOMPERTZ remarked that he was bound to recognize that very often brilliant results were obtained by irrigation of the tympanic cavity through the tube in acute and chronic suppurative inflammations, but he insisted that the result could not be counted upon, that under certain circumstances it could do harm and lead to actual danger, and he would therefore advise that irrigation through the tube should be quite given up. He communicated further, that in earlier years he saw cases of acute inflammation of the middle ear in which, when the irrigations through the tube were commenced, otitis of the mastoid process supervened in spite of a free outflow, and that improvement only took place as soon as this method of treatment was given up. Experiments on the dead body, which he had carried out in the year 1890 in Prof. Weichselbaum's Institute, had made clear to him the cause of this. Four years previously Gruber had carried out similar experiments on the dead body, in order to prove that with an intact membrane fluid could be injected through the tube into the middle ear. Gompertz now made large openings in the drumhead and injected a weak solution of ferro cyanide of potash through the tube with the usual pressure, so that the fluid could run out through the meatus. He was then able to make out, by means of the reaction with perchloride of iron, that the fluid had reached the narrowest passages of the diploe, nearest to the cranial cavity. From this he thought it proved that by irrigation the infective organisms could be driven deep into the osseous parts, into which they otherwise would not have reached. Finally he dwelt upon the possibility that in cases of defect of the tegmen tympani vel antri the fluid might reach directly under the dura mater. In November, 1888, he treated by means of orthodox irrigation of the tympanum through the tube a young man under the care of Prof. Politzer, who demonstrated the preparation before the societies--a young man referred to Prof. Dittel's surgical section on account of symptoms of cerebral abscess following chronic median

suppuration of the left ear. The patient was not unconscious, but was apathetic, had paralysis of the right half of his face, a temperature of 37.5, and a pulse of 90. During the syringing the patient suddenly collapsed and died without rousing from his coma, in a quarter of an hour. On *post-mortem* examination the brain was found to be very oedematous, the meninges free, the temporal convolutions in parts adherent to the dura mater and discoloured. In the temporal lobe there was found an old abscess, the size of a hen's egg, which had burst into the cranial cavity. The dura mater was, for the extent of four inches, converted into a discoloured suppurating skin, and on the upper surface of the petrous bone was a carious defect with rough edges of from seven to eight millimètres in diameter. Dr. Gompertz had no doubt that during the irrigation water had got into the cranial cavity, and by increasing the intra-cranial pressure had brought about the end.

Dr. REINHARD (Duisburg) no longer carried out irrigation of the tympanum from the tube in acute suppuration of the middle ear, but he recommended it strongly only in chronic cases, whether of the mucogelatinous or the purulent kind, especially when complicated with caries of the median and inferior wall of the tympanum. One condition must always be present: absolutely free egress through a sufficiently large opening in the membrane, which should be carefully ascertained beforehand by means of the air douche. The fatal result in the case described by Dr. Gompertz was not necessarily dependent upon the irrigation.

Prof. POLITZER thought that Dr. Gompertz's fears were exaggerated. Anatomical experiments are not always applicable to pathological conditions, as in purulent inflammations matter was always present in the mastoid antrum, and hence no more fluid could be driven in. To give up these injections would be a great loss to therapeutics, as only by these means in a number of obstinate cases could recovery be brought about. The case of cerebral abscess in which death had suddenly taken place after injection was more easily explained by the shock induced by the catheterism and injection.

Dr. SCHEIBE (Munich) considered injections through the tube dangerous in acute middle ear suppuration; necessary in the chronic, with free opening in the lower half of the drum, since here, as a rule, communication takes place in the opposite direction; and when the upper cavities of the tympanum are chiefly involved, no particular benefit could be expected to accrue from tubal injections. He was of the opinion, judging by a similar case which he had himself observed, that the sudden death in the instance mentioned by Dr. Gompertz was to be attributed to the injection.

Dr. O. BRIEGER insisted, as a primary condition before the use of copious injections through the tube, that all acute inflammatory manifestations should have subsided. His experimental investigations as to the direction taken by the injected fluid agreed perfectly with those of Bing, but the results were not yet sufficiently constant in order to establish an absolute general rule. In contrast to the treatment recommended by Bing for the papillary perforations, he advised active dilatation of the orifice, and mentioned that in two cases he had removed

the prominence with the snare for the purposes of histological investigation, and had thereby brought about a very good result.

Prof. GRUBER expressed himself to the effect that in chronic exudative inflammations the use of injections should not be quite given up. There were cases in which the exudation could be removed from the drum by no other means, and, furthermore, the irrigations serve to bring about a subsidence of the severe pains. In acute cases he hardly ever made use of them, because he was afraid of driving exudation into the mastoid cells, but chiefly for the alleviation of severe pain, which could not otherwise be diminished. In chronic cases the danger is less, as in the majority of the cases there exists already inflammation in the mastoid cells.

Dr. SZENES was of the opinion that, as a rule, these injections should not be practised in acute inflammations of the middle ear. However, he had had the opportunity of seeing most striking results from its use in two cases. In a girl, aged sixteen, in which there was at the same time affection of the mastoid, and chiselling had been recommended by another colleague, he made use of injections, and brought about such alleviation that the patient asked for a repetition of them. This was repeated on several occasions, the mastoid was treated antiphlogistically, and a complete restoration to health followed. The other case was that of a man, aged sixty, with similar symptoms and the same course of events, in whom the injection of the drum for a few times in acute suppuration of the middle ear was followed by the best result.

Dr. E. PINS (Vienna) had repeatedly made use of these irrigations with good result in chronic and subacute cases, but once he had had a mishap, because in this case cerebral complications ensued, and probably abscess of the brain. After the second irrigation, vertigo came on and death followed the next day. According to his opinion irrigation is of great use and does no harm if the perforation in the drum is sufficiently large, in order to allow free exit for the fluid.

Dr. GOMPERTZ replied to Prof. Politzer that when in pathological cases the cell spaces of the mastoid process are filled with pus, the latter was exposed to a higher pressure during injection, which was a matter of some importance. He differed from Drs. Politzer and Reinhard with regard to their opinion as to the cause of death in the case of cerebral abscess mentioned by him.

Prof. KIRCHNER. In irrigation of the tympanum through the Eustachian tube, it is of the utmost importance that the opening in the drum should be sufficiently large. In cases in which the perforation reaches almost from the upper to the lower border of the membrane it is impossible for such a high pressure to be brought about in the cavity as thereby to cause any reasonable danger to the cranial contents. Irrigation with antiseptic solutions ought not in any case to be practised with undue force.

Dr. GOMPERTZ. *On the Results of the Conservative Method of Treatment in Chronic Suppuration of the Upper Cavities of the Tympanum.*

Gompertz reminded his hearers of his statistics ("Monatsschrift," 1892 and 1893) of the results of the non-operative treatment of forty-nine cases

in his private practice, which he, as far as it was possible, had followed up, and to which he had added twenty new cases. Of these latter, nineteen have so far recovered after an average duration of treatment of twenty days that all secretion and formation of granulations have disappeared ; that the mucous membrane up to the interior of the attic looked pale, soft, even epidermized, and the function of the ear had been raised to a very material standard. He considered the excision of the malleus and incus as a very important extension of our therapeutic resources, but he considered it only applicable in suppurations of the tympanic attics when recovery is not to be brought about by the conservative method, and he gave expression to his opinion that the recurrence of cholesteatomatous formations cannot be guaranteed against by excision of the malleus and incus. What strengthens him in his principle of giving the conservative method the largest possible scope is the knowledge that so many subjects of cholesteatoma formation present constitutional dyscrasias, such as anæmia, scrofula, apical catarrh, lupus and hereditary lues, or inherit such from their parents who present definite evidences of them. Only the smallest fraction of those referred to in his statistics were perfectly healthy apart from their ear diseases. In conclusion, he demonstrated new canulæ of hard celluloid, which he recommended on account of their lightness, also some made of "half-soft" celluloid, which could be borne by even the most sensitive patients.

Dr. REINHARD (Duisburg) laid down the indications of attic suppuration, and for operative or conservative treatment. Suppurations limited to the attic were in Schwartze's clinic treated in the conservative way. Reinhard had not seen the formation of cholesteatoma take place after the carrying out of the excision of the malleus and incus, but he had found cholesteatoma in the antrum along with attic suppuration, even with extensive opening of the tympanic cavities, to which Stacke, Kretschmann, and others had already drawn attention. These were the very cases which were most quickly healed by operative treatment.

Dr. SCHEIBE had seen about sixty cases of suppuration limited to the attic along with cholesteatoma formation, and in about fifty per cent. he had observed recovery under simple conservative treatment. In cases of caries of the antrum he is in favour of Stacke's operation, but in those cases in which irrigation carried out once in three or four weeks is sufficient in order to keep the ear clean he would not venture to recommend the operation.

Dr. GOMPERTZ declared that he was by no means an opponent of the operation of excision of the incus and malleus, but he insisted that no uncomplicated case should be operated on forthwith until the conservative treatment had been fairly tried.

Dr. BEHRENDT (Dantzic) mentioned two cases in which cholesteatoma had recurred after excision of the ossicles. In one of these the operation was carried out on one ear and not on the other ; the second ear healed by means of the conservative method. When he again saw the patient a large cholesteatoma had re-formed on the side operated on.

Dr. O. BRIEGER wished to add that the results of the conservative

treatment of attic suppuration, according to Gompertz's statistics, did not come behind the results after excision of the ossicles. It was only possible to decide upon the relative value of the two cases after further observation and control of the cases for years. He regarded the excision of the ossicles, which he had carried out in latter years in over sixty cases with satisfactory results and good effect on the auditory functions, as only a preparatory operation which laid the way open for the treatment of the focus of disease by rendering the upper tympanic cavities accessible. He remarked that he had been able to check the favourable effect of the operation by *post-mortem* investigation in two cases where death had taken place after the operation from abscess of the brain, or it may be dermatomyositis (*sic*) septica. Unsatisfactory results are sometimes attributed to the operation, but this is because it is often impossible to recognize simultaneous disease of the antrum along with the attic suppuration.

Dr. GOMPERTZ heard with satisfaction Dr. Reinhard's statement that in the Halle clinic the conservative treatment was employed, and all the more because it had been recommended by Schwartze's pupil to operate at once, even in suppurations limited to the attic, and not to waste time by useless syringings. It still remained to be proved that recurrences were avoided by Stacke's operation. Gompertz recalled to mind the not infrequent cases of destruction of the membrane and of the ossicles with extensive defect of the postero-superior wall of the membrane—the same conditions as were found after Stacke's agreeable (!) operation. In such cases were also frequently to be found cholesteatomatous accumulations of enormous size and one or two days after their removal the membrane appears pale, smooth and shining, but when the cases are examined a few months later new accumulations are often to be found. As regards Dr. Brieger's remark upon the discovery of tubercle bacilli in the cholesteatoma membrane, it must be kept in mind, along with the experience of the frequency of tuberculosis in persons suffering from the disease.

Dr. GOMPERTZ. *On the Action of Artificial Drums.*

After a short retrospect of the theories hitherto held with regard to the action of artificial drums, the writer observed that all authors had expressed themselves to the effect that it was impossible beforehand to form any conclusion as to the result to be produced. He insisted that in most of the perforations which occupied less than a quarter of the drum, brilliant improvement in hearing power was not obtained, which he explained by the chain of ossicles being almost intact; but, on the other hand, that very often in such cases the subjective noises ceased as soon as the aperture was closed. He found this substitute useful in those cases in which the membrane was reduced to a small peripheral margin with the manubrium partly or wholly preserved and adherent to the promontory; further, in those cases in which the perforation involved the postero-superior quadrant or the whole of the posterior half of the membrane. In all cases the fenestra ovalis was freely accessible, and almost always the long process of the incus was lost and the mucous membrane epidermized in the greater part of its extent. If the lining of

the tympanum preserved its mucous character the artificial drum could not be borne for any length of time.¹

Upon the other hand, an epidermized mucous membrane could allow of the tolerance of the different kinds of artificial drums very well. Good results were sometimes obtained from the use of disc-shaped artificial drums, still better ones from cotton-wool, and the best of all from those formed of boracic acid powder. With the last, if the body of the incus was still preserved, the sound-waves could reach the plate of the stapes after the insufflation of the powder, although previously they only got to it by means of the malleus acting on the incus. He used in all these cases by preference the "powder-membrane," already recommended by Kosegarten, which, if well blown in after the removal of suppuration or cholesteatoma, remained even for weeks or a month, caused no discomfort, and surpassed in effect all the other kinds of artificial drums.

Prof. GRUBER drew attention to the fact that he had already for some years made known that those patients received the greatest benefit from the use of the artificial drum who presented loss of substance in the posterior segment of the membrane, especially those in whom there was a loss of continuity between the incus and the stapes.

Prof. DELSTANCHE confirmed Prof. Gruber's observation from his own experience. In one case he was able to remove the giddiness completely by the use of the artificial membrane.

Dr. SZENES mentioned that in more than thirty cases he was able to prove by means of physical investigation that a moist artificial drum (cotton-wool, india-rubber, etc.) brought about a more marked improvement of hearing power for the watch and the voice than the dry ones. On the other hand, in spite of the fact that the moistening was effected by means of an antiseptic solution (two to three per cent. of carbolic oil), in the majority of cases suppuration started again, which was much less frequently the case when a dry artificial drum was used.

Dr. REINHARD. *Specimen of a Carcinoma of the Maxillary Antrum.*

This was a case which presented the symptoms of empyema of the antrum, but the investigation with the probe, which came in contact with soft masses of tumour in the cavity, occasioned suspicion of malignant growth and led to histological examination. The operation was performed eight weeks ago.

Dr. PINS. *Demonstration of his Nasal Douche, which occasions spontaneous closure of the Eustachian Tube.*

This consisted of a Heron's globe provided with an olivary tip for the nose, and a mouth-piece for blowing into it. This is done by the patient himself, and with distended cheeks, so that the soft palate is vigorously raised (Lucae and Halt) and both pharyngeal Eustachian openings are

¹ In case of an unaltered mucous membrane, artificial drums should only be used if the site of the perforation is so far from the inner wall of the tympanum that this is not touched by the artificial membrane. These patients used, as a rule, Prof. Gruber's artificial drum made out of linen, and on this account, that under circumstances of moisture it was more easily applied than one made of gutta-percha to the ossicles, and that it brought the dislocated ends of the latter into contact, whereby the sound conduction was improved. He took this opportunity of stating that in some, although certainly very few cases, the patient can be relieved from troublesome vertigo by the use of the artificial drum.

covered. The patient by means of a strong expiratory effort drives the fluid out of the apparatus through his naso-pharynx, so that it can run out freely through the opposite nostril without entering the Eustachian tube. On no occasion has he observed the entrance of the fluid into the tubes, although he has used the douche constantly for four years on more than two hundred patients. Other observers who have used this douche for a considerable time (Stoerk, Roth, Rethi, Beni) have so far had no unpleasant results.

Dr. DELSTANCHE (Brussels). *Intra-Tympanic Injections of Vaseline Oil.*

He recommended the intra-tubal injection of white vaseline oil in acute and chronic middle-ear disease. He found that the mucous membrane tolerated the pure preparation, which was clear and odourless, without the slightest irritation, and that the oil was absorbed in a short time.

Dr. GOMPERTZ confirmed his observations. He had employed this preparation since it was first recommended by Delstanche for sclerosis, and had obtained very satisfactory results. He is of the opinion that the vaseline oil exercises a favourable influence upon the mucous membrane of the tube. He sterilizes by boiling the oil procured from the dealers, and thereby gets rid of the least trace of the smell of petroleum.

Dr. ZIEM (Dantzig). *On the Forcing of Fluids from the Nose into the Middle Ear, and a Description of a New Force Pump.*

Fluids in the nose can only be driven into the middle ear in the position of rest of the tube or during swallowing :—

First : If there is a counter opening in the membrana tympani.

Second : After the hurling in of the fluid when mixed with air in the use of pumps and similar apparatus which are not air-tight.

Third : In sneezing and similar acts of expiration.

Without these factors it is impossible for fluid to be driven into the middle ear by strong pressure.

Dr. HAUG. *On a Case of Fibrous Sarcoma of the Pharyngeal Orifice of the Tube.*

The preparation came from a student, aged seventeen, with left-sided deafness and nasal obstruction of three-quarters of a year's duration. Examination showed the left drum membrane indrawn to its maximum, and having a marked line of exudation in its lower part. Hearing for whisper was quite lost and the tubes absolutely impervious. On an attempt being made to introduce the catheter the instrument came upon an obstruction at the posterior extremity of the inferior meatus, which rhinoscopically appeared as a polypoid tumour about the size of the distal portion of the thumb, bluish-red, oblong, and rather firm in consistence. It was situated above and behind, close to the neighbourhood of the tube. It was removed by means of the cold snare and extracted through the mouth. After the operation hæmato-tympanum ensued. Two days after it could be seen that the posterior lip of the tube was much swollen and presented a loss of substance of four millimètres in

width, the site of the tumour. The hearing power improved after the extraction of the tumour, as soon as the hæmorrhagic effusion in the tympanum was absorbed. Gentle internal massage was practised for a short time and complete disappearance of the obstruction of the tube followed. Anatomical investigation showed to the naked eye a fairly compact tumour, with a smooth surface, about the size of a plum, pear-shaped, greyish-red, and on section there was a yellowish-red surface, substratum fine-fibrous strong and fairly considerable amount of juice. The root was very vascular, and was attached by the pedicle to a small belt of cartilage, about two millimètres in width, torn away from the posterior lip of the Eustachian tube. Microscopically the tumour declared itself as a fibrous sarcoma on account of the number of relatively long cell forms, as also on account of their arrangement. The case is remarkable on account of the rarity of this situation for new growths, and also on account of the symptom of closure of the tube with consecutive exudation in the tympanum, which in this case could only have been brought about through the mechanical obstruction of the canal of the tube.

Concluding Remarks by Prof. POLITZER. He thanked the members of the section for the enthusiastic part they had taken in its sittings, and he reviewed briefly the work they had done. During their meetings no region of otology had been left out of sight. The papers and demonstrations had brought forward a mass of new facts, and the discussions threw much light upon the subjects. The personal contact with congenial friends was stimulating for all, and he was sure that all would return to their work with new energy and pleasure. He regretted the unfavourable impression which would be made upon the minds of visiting *confrères* by the insufficiency of the Viennese Aural Clinic as compared with the palatial buildings devoted to them in Germany. Owing to the promise of their beloved monarch, however, there was a prospect of the enlargement of the General Hospital, and of the construction of a new clinic, so that otology might be provided with a suitable home, fitted up with all modern appliances. After a few cordial valedictory remarks and earnest adjurations to raise aloft the standard of science, he declared the otological section of the sixty-sixth Congress of Naturalists as closed.

Dundas Grant (Trans.).

THE LARYNGOLOGICAL SOCIETY OF BERLIN.

Meeting, December 7th, 1894.

Communicated by Dr. EDMUND MEYER.

MUSEHOLD showed a patient, seventy-two years of age, who had been hoarse for three years, and aphonic for eighteen months. He consulted the author in consequence of difficulty in breathing, which had set in three months previously. The whole interior of the larynx was filled, excepting a small opening on the left side posteriorly, by a large globular

tumour. On phonating strongly, the right ventricular band arched forward like a bladder, while during quiet phonation it maintained its normal contour. The shape and position of the bladder-like swelling proved it to be a dilatation of the ventricle. He removed the tumour in the course of several sittings without getting rid of the bladder-like prominence of the false cord.

B. FRAENKEL referred to a case of a large myxoma of the vocal cord in which he could observe the same phenomenon.

TREITEL demonstrated a jointed *Œsophagoscope*, which is introduced closed, and can be opened by a screw arrangement.

B. FRAENKEL laid before the Society a specimen of *Enchondroma of the Thyroid Cartilage*, which had necessitated the extirpation of the one half of the larynx.

GRABOWER. *On the Centres of Innervation of the Laryngeal Muscles situated in the Medulla Oblongata.* As a sequel to the fact established by him experimentally at an earlier date, that it is not the accessory but the vagus which is the motor nerve of the larynx, the author undertook to determine exactly the position, extent, and relation of the nuclei of the accessory and vagus, as well as of their roots, in about fifteen hundred serial sections, extending from the region of the third cervical nerve to the pons.

He arrived at the following results :—(a) The nucleus of the accessory is situated only in the anterior cornu of the spinal cord, partly in its median and partly in its dorsal portion. (b) The roots of the accessory, following two different courses, pass from the periphery through the white substance, bend round in the grey matter and reach the nucleus, some directly, others by a circuitous route. (c) The nucleus of the accessory ceases about the middle of the pyramidal decussation. (d) A number of irregularly arranged nuclei afterwards take its place, and these unite higher up to form the nucleus of the hypoglossus. The accessory is consequently a purely spinal nerve. (e) The author has in addition found ganglia on the accessory, and if this condition be constant it also proves that the nerve is entirely spinal. (f) The motor centre of the vagus commences only at a distance from where the accessory nucleus and roots disappear, so that all relation between the two is excluded. (g) The sensory and motor nuclei of the vagus are constantly connected with one another by means of medullated fibres. He regards the motor nucleus of the vagus as the centre for the innervation of the laryngeal muscles, and protests against this nucleus being associated in name with that of the accessory, as if they were connected, which is not anatomically the case. There was a demonstration of excellent microscopic preparations, illustrations of some of which may be found in the "*Archiv für Laryngologie*," bd. II., heft 2.

SCHADEWALDT described in detail a case which he had previously shown as aneurism of the aorta with paralysis of the recurrent, but which at the *post-mortem* examination proved to be a mediastinal carcinoma. *The Differential Diagnosis between Aneurism and Tumour.* Paralysis of the recurrent due to a mediastinal tumour develops

gradually. Hoarseness sets in, but again passes off, and a paresis can be demonstrated only after a considerable time. In aneurism, the paralysis of the vocal cord is often the first symptom. Hæmorrhages are always an indication of the approaching end in aneurism, while in tumours not infrequently there is hæmoptysis at an earlier date. Schadowaldt claimed a great importance for these distinctions, not only in diagnosis, but also in treatment, for, in his experience, aneurism of the aorta is usually dependent on syphilis, and he therefore considers anti-syphilitic treatment indicated.

Meeting, January 18th, 1895.

FRAENKEL referred in warm terms to the merits of the deceased Gottstein.

GRABOWER stated that Thorner, of Edinburgh, had arrived at the same results as himself in regard to the relation of the nucleus ambiguus to the innervation of the larynx.

All the office-bearers of the Society having been re-elected—

P. HEYMANN showed a patient with a large *Tumour of the Septum*, which he considered a papilloma, but which was regarded by others as a gumma.

C. GERHARDT. From the *External Examination of the Larynx and Trachea* we can obtain important information without making use of the laryngoscope. During dyspnœa, if the larynx move only slightly, the cause is to be sought in the trachea; if more extensively, the stenosis is then in the larynx. In laryngeal croup the neck is bent backwards so that the bodies of the vertebræ may press the cartilages of the larynx flat; in stenosis of the trachea the chin approaches the breast. In tracheal stenosis there is expiratory stridor; in laryngeal stenosis, inspiratory stridor. The author does not look upon tracheal tugging as a characteristic symptom of aneurism. In a case of aneurism of the ascending aorta he observed distinct interruption of the tone during prolonged phonation. If a finger be placed on each side of the larynx, between the thyroid and cricoid cartilage, the action of the crico-thyroid is felt. If the contraction be absent on one side, a paresis is present, and we can determine whether this is of central or peripheral origin by the electrical examination. If the finger be pushed higher, towards the thyroid cartilage, the vibrations of the vocal cords are felt; in this way a paralysis of the recurrent can be diagnosed in many cases, and the presence of extensive ulcers and tumours be established. The voice can sometimes be improved by pressing on the thyroid cartilage, especially by compression in hysterical paresis. If "ah" or "oh" can be produced by pressing on the thorax—passive voice production—then we have probably to deal with a double abductor paralysis. Abnormal movements of one vocal cord can also be felt with the finger placed behind the upper cornu of the thyroid. He then referred to a case of sarcoma of the leg, and of the right and left lung and pleura, in which there was

giddiness on standing erect. With the laryngoscope, tremor-like adduction movements of the vocal cords were seen during expiration, which could also be felt externally. The *post-mortem* examination revealed a sarcoma metastasis in the frontal bone which pressed on the frontal convolutions.

TREITEL reported a case of *Struma with Recurrent Paralysis*, in which the voice could be produced by pressure.

FLATAU mentioned that the entrance to the larynx could often be seen without the laryngoscope by raising the larynx and depressing the tongue strongly.

B. FRAENKEL has found that in paralysis of the recurrent the vibrations of the voice on the affected side are often not weaker than on the healthy side.

Meeting, February 15th, 1895.

LANDGRAF. *Acute Circumscribed Œdema.* The author gave a description of this disease, based on two cases which he had observed. In a short time, usually about ten minutes, a swelling of the skin arises, two to ten centimètres in circumference. This is not itchy, and causes only a certain feeling of tension. The duration of the swelling of each part varies from two to twelve hours. The face is affected most frequently, and in five out of seventy cases the larynx was attacked. The disease is liable to recur in areas which have been once affected. The season of the year, age, occupation, and sex exercise no influence. The temper is somewhat irritable, as a rule, and in occasional cases stupor, drowsiness, colic, and vomiting were noted. The urine is sometimes scanty, and a tendency to cutaneous hæmorrhages and to hæmoglobinuria is observed. There is usually no apparent cause for the disease, but a susceptibility must be assumed. Heredity also plays a certain part; thus, Mosler obtained a history of the disease running through five generations of one family. In those predisposed, the attack may be induced by the use of alcohol, bodily exertion, mental excitement, injuries, the action of cold, or hypnotism. The diagnosis is easy if the patient be seen during the attack. The prognosis is favourable *quoad vitam*; in only one case there was death from laryngeal œdema. A certain flabbiness of the parts of the skin which have been repeatedly attacked often remains behind. The treatment is rather ineffective; one case was cured by quinine. In œdema of the larynx, scarifications should be made. Views are at variance as to the nature of the disease; some authors regard it as an angio-neurosis, others as due to changes in the formation of the blood. It may have a certain relation to urticaria, but in the author's opinion the two affections are not identical.

In the discussion, Rosenberg, Alexander, and Scheinmann mentioned cases in which they had observed an œdema of the larynx, due to no apparent cause.

SCHADEWALDT reported a case of *Laryngeal Œdema of Arthritic Origin.*

In the discussion on Schadowaldt's paper on aneurism and tumour,

Rosenberg denied that the recurrent paralysis is first present in aneurism, while in mediastinal tumours it is developed only gradually. At the beginning, even in aneurism—as was seen in a patient of Grossmann's and in a case of his own—an irritation of the recurrent may set in, which is manifested as laryngeal spasm.

Gesellschaft der Aerzte in Wien. Meeting, Jan. 11, 1895.

Continuation of the Discussion on the Serum Treatment of Diphtheria.

HELM has treated forty-eight children, with 28·5 per cent. mortality.

MONTI concludes: In cases of fibrinous membranes the Heilserum has a favourable influence, the membranes being removed earlier. Laryngeal stenoses are often improved, and in the fibrinous cases this treatment gives the best results. Cases combined with staphylococcus also will give good results if the treatment is commenced early. Septic forms are not influenced by this treatment. Serum sometimes produces bad symptoms, such as erythemata, paralyses, urticaria, albuminuria. In no case had these conditions any fatal ending.

UNTERHOLZNER has treated thirty-seven cases, with 25·8 per cent. mortality. During the last season he had a mortality of sixty-six per cent. *Michael.*

Ärztlicher Verein Hamburg. Meeting, Jan. 4, 1895.

MÜLLER showed a boy with palatine fissure much improved by Schultsky's obturator. *Michael.*

Gesellschaft der Aerzte in Wien. Meeting, Jan. 25, 1895.

Continuation of the Discussion on the Heilserum Treatment.

DRASCHE does not believe the good effects of Heilserum. The statistics do not show it to be better than others. Serum is no indifferent substance. Already Brucke has described the unfavourable effects of serum injections on the kidneys. Recurrences are often observed.

GRUBER answers Kassowitz that he agrees with him in his scepticism, but that the bacteriological and experimental facts of Behring, Rossel and Loeffler are well founded.

KALISKO has performed seventy-five *post-mortem* examinations of children dead from diphtheria and treated by Heilserum. He has formed the impression that by this treatment the solution and destruction of the membranes is favoured in a very high degree. The degenerative processes of the heart are observed just the same as in other treatments.

PALTAUF showed some rabbits infected by diphtheria. Those which have been treated with Heilserum are cured; those not so treated are ill, and show the symptoms of laryngeal stenosis.

WIDERHOFER defended his theses, and stated that the remarks of Kassowitz and Drasche have not changed his views. *Michael.*

Aerzte Verein Hamburg. Meeting, Jan. 22, 1895.

ZARNIKO showed a case of perforatio septi simplex.

SANGER showed a lady, fifty years old, with myxoedema, treated with success by thyroid tablets.

ENGELMANN showed three cases of stammering in children. *Michael.*

Aerztlicher Centralverein Basel. Meeting, Nov. 3, 1894.

FEER has treated three cases of diphtheria with Heilserum with good results, and recommends this method.

BECK showed a serum syringe. *Michael.*

Obituary.**JACOB GOTTSTEIN.**

GERMAN laryngology has lost one of its oldest and most celebrated exponents in Gottstein, who died in his sixty-third year. He was a man of great talent and of indefatigable scientific zeal, which enabled him to produce very much valuable work in otology and laryngology. Great objectivity and strong self-criticism is a sign of all his work, the scientific value of which will not lose by the changing of theories. He was a regular visitor of all special congresses, distributing to others the rich treasure of his great experience. For more than twenty years he was a teacher of laryngology and otology in Breslau, but in spite of his great merits he never obtained that position which he had a right to claim. He remained a privatdocent to the end, and only received the title of professor in the year 1889. But he will live in our memory by his works. His book on laryngeal diseases is one of the best that ever appeared. His method of tamponing in ozæna and his instrument for adenoid vegetations are used throughout the world, and will prevent his name from being forgotten. All who have had the honour of knowing him personally will regret the loss of an amiable and talented colleague.

While not yet promoted he obtained a prize for his first publication, "De Bichati vi Historica."

He published in 1872 a paper on the histology of the columella.

The following index of his publications cannot pretend to be complete :

"Bemerkungen über Larynxabscesse." Berliner Klin. Woch., 1886.

"Extirpation eines Sarkoms bei einem 7 jährigen Kinde." Wiener Med. Woch., Bd. 4.

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And his standard work—

"Lehrbuch der Kehlkopfkrankheiten." 1884. Second edition, 1888; third edition, 1889; fourth edition, 1893.

Dr. ROUGE.

WE regret to record the death of Dr. Rouge, who died at Lausanne on the 13th of January, aged sixty-two. Although chiefly known in this country as the inventor of "Rouge's operation," he was a general surgeon of wide experience, and a facile writer on many subjects. He was at one time surgeon to the Cantonal Hospital of Lausanne, and was the first editor of a small "Bulletin," which developed into the now well-known "*Revue Médicale de la Suisse Romande*."

NOTES.

THE BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

DURING 1894, under the presidency of Dr. J. MACINTYRE, an invitation to the American Laryngological Association to visit London, and take part in the proceedings of the British Association, was cordially responded

to. It has now been resolved by the latter to convert the usual July meeting into a special meeting of the Association, to be held in the last week in July, in which the Fellows of the American Association, and several distinguished Continental laryngologists, are to be invited to take part.

The following subjects have been selected for general discussion:—

1. The therapeutics of diphtheria, with special reference to the anti-toxin treatment.
2. The diseases of the accessory cavities of the nose.
3. The surgical treatment of laryngeal phthisis.
4. Laryngeal stenosis and its treatment.

The discussions will occupy two days, and there will be in addition a *conversazione*, given by the President, Dr. WHISTLER; a dinner, to be given by the Society; and a garden party by the Treasurer, Dr. NORRIS WOLFENDEN, at his country residence near Dorking.

Further particulars will be announced later on.

THE Fifth International Congress of Otology will be held in Florence from the 23rd to the 26th of September next, under the presidency of Prof. GRAZZI. We will publish the subjects selected for discussion, and the names of their introducers, as soon as they have been decided on. It is to be hoped that British otology will be well represented, more especially as it has been decided to invite the Sixth Congress to meet in London.

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**REMARKS on FACIAL PARALYSIS in RECENT OTITIS
MEDIA; and on the Treatment of ACUTE OTITIS
when the Hearing Power is threatened.**

By RICHARD LAKE, F.R.C.S.

THE period at which facial paralysis occurs is very variable, particularly in children. It may be the first symptom of tympanic inflammation, it may precede or accompany pain and external discharge, or it may be a later symptom, and appear a few days or weeks after the onset of otorrhœa. These remarks are illustrated by the following cases:—

1. C. B., aged one and a half years. Pain in left ear for one week, then left facial paralysis was noticed; the pain continued for another seven days, when otorrhœa set in and the child was brought to the hospital.

2. B. C., aged forty. Acute otitis. Otorrhœa and facial paralysis appeared on the same day.

3. A. B., aged four. Influenza. Double profuse otorrhœa; two weeks later, double facial paralysis.

4. G. C., aged forty-seven. Acute otitis media suppurativa for two weeks, and then facial paralysis on same side.

5. L. M., aged seven. Otitis media suppurativa nine weeks; then facial paralysis occurred, and the child was brought to the hospital.

The cases of otitis media in very young children, without involvement of the membrane or external otorrhœa, are by no means rare, and are often associated with retraction of the head, due to pyogenic irritation of the meninges in the posterior fossa. Relief can often be afforded by a free incision of the membrane, combined with hot fomentations, and there

are similar cases which, as the late Dr. Hadden pointed out, can be successfully treated by the administration of mercury. The incomplete development of the temporal bone is clearly the cause of the infection of the posterior fossa in early life, and doubtless the incompleteness of the bony canal for the facial nerve explains also the facial palsy which not unfrequently accompanies the otitis media of infants, and the liability to which certainly decreases as age advances.

Even when the aqueduct of Fallopius is complete in infants, the layer of bone is so thin and porous that it is easy to understand how readily pus or muco-pus in the tympanum can involve the nerve and produce paralysis. In reference to this point, it is interesting to note that, at the autopsies of infants, muco-pus is frequently to be seen in their tympana, without having produced any symptoms during life or, at any rate, symptoms definitely referable to the ear.

Palsy of the facial nerve in chronic otorrhœa is well known, but in association with acute disease of the tympanum not much has been written.

Wilde (1853) speaking of acute otitis, remarks :—"Facial paralysis from the extension of the inflammation to the bony canal in which the portio-dura nerve passes, sometimes attends otitis. Why the nerve should be affected in cases of very slight inflammation of the cavitas tympani and its external membrane, and not in those in which there is violent otitis extending to the periosteum and mastoid cells, it is difficult to determine, etc.

"The case of J. Richardson (No. 3), recorded at page 68 of Bell's book, is evidently one of acute otitis, producing facial paralysis ; Case No. 33 is of a like nature, etc."

Speaking of Bell's paralysis when attributed to cold :—"It is true if we carefully examine the records of such cases we shall find dulness of hearing, tinnitus aurium, and a slight pain in the ear, enumerated among the symptoms. In my essay on diseases of the membrana tympani, I stated that I was strongly inclined to think that many of the cases of paralysis of the seventh pair of nerves, where we have no mechanical lesion, etc., may have been caused by some form of otitis. It not unfrequently happens that the inflammation extends to the portio-dura in the aqueduct of Fallopius, and partial or complete paralysis of that nerve is the result, which is removed as soon as the inflammation has wholly subsided."

Politzer : "The inflammation is rarely complicated by facial paralysis." And also : "The observations of Wilde v. Troelsch Tillmanns, etc., show that facial paresis sometimes occurs even in cases of simple non-perforative catarrh."

Grüber (1890, Law's translation) : "It has, however, been settled both from clinical and from *post-mortem* observations, that such a paralysis may arise without any osseous affection whatever through a simple serous or other exudation in the Fallopian canal, or, again, from simple pressure of an exudation in its tympanic cavity."

Miot and Baratoux (1894) : "And as observed by Toynbee and Triquet, facial paralysis is produced."

Hovell (1894): "And in rare cases paralysis of the facial nerve and "neuralgia of the fifth pair have been observed to accompany the "attack."

Some of the reasons why palsy of the facial nerve should be associated with recent otitis media have already been pointed out; but the pathological mechanism of the involvement of the nerve has been described in different ways by various authors. There can be no doubt that it is due to the spread of an inflammatory process from the tympanum to the facial canal. Wilde and Toynbee's views have already been stated.

Politzer says, with regard to facial palsy occurring in chronic otitis media suppurativa, that "it is due to an extension of the inflammatory process to the Fallopiian canal and nerve sheath," and this explanation is no doubt as true in recent otitis cases as in chronic cases.

In respect of the frequency of the onset of facial palsy in recent cases, I find that it occurred four times in 658 cases of suppurative otitis. These cases were consecutive cases during two years, the total number of ear cases seen during that period being 1250. (St. Thomas's Hospital.)

The methodical and efficient treatment of these cases of acute otitis, complicated with facial palsy, appears to be best conducted in the following way:

In infants—

1. A free incision of the membrana tympani should be made.
2. Antiseptic irrigation should be carried out every six hours.
3. Hot boracic fomentations should be applied every two hours.
4. Some boric acid ointment may be applied to the outer part of the meatus and the pinna to prevent eczema.

In the adult the same treatment should be adopted, but in addition—

5. Two or three leeches should be applied over the mastoid and one over the tragus; and the leeching may be repeated if it appears desirable.

In the adult the *hearing power* is seriously threatened, as well as the possibility of permanent palsy; and to obviate the *loss of the hearing power* (which is a great disaster whether the patient is a child or an adult) as well as to antagonize the chances of permanent palsy, I strongly advocate, if the otitis media acuta is not quickly subdued by leeches, fomentations, etc., the opening of the mastoid antrum (the performance, in fact, of the typical Schwartze operation) so that the antrum, attic and tympanum may be washed out by a strong antiseptic solution, and thus the inflammation be arrested.

One illustration of the value of this operation may be mentioned.

A man, aged forty, came to St. Thomas's Hospital with double very acute otitis media of influenzal origin, and of three days' duration. He had double facial palsy.

On the right side the above operation was done, and he recovered completely both from the deafness and the facial palsy.

On the left side the mastoid was not opened and the tympanum was destroyed. He became permanently deaf on this side, and the palsy, too, was not recovered from.

In children, if the discharge is very profuse it is probably best to

adopt the same treatment if milder measures fail. If the disease is insidious and the palsy has not lasted too long, the opening of the mastoid is probably the best course to pursue. In one infant of nine months, who had had otitis and palsy for three months, the treatment resulted in the clearing up of the paralysis.

Electrical treatment of the muscles may aid recovery after long neglect, as in the following cases.

O. M. G., aged ten, had been afflicted with left facial paralysis since the age of eight months; the face was not wasted on this side though it was absolutely immobile. The faradic current was useless, but galvanic interruptions of moderate intensity induced contractions in all but two muscles, which required a still more powerful galvanic current. This treatment was commenced in September, 1889, and was completed by the end of November in the same year, cure being absolute; the sittings were daily.

A. W., aged twenty-one; left facial palsy since the age of three years. This case, though never entirely cured, was most wonderfully improved, but here there was some wasting of the soft tissues but none apparently in the bone, which is surprising after eighteen years. Dr. Otway, of Barnes, who carried out the treatment in this case, kindly gave me these details.

It will not be out of place to again urge the advantages obtained in cases of acute otitis media from the irrigation of the tympanal cavities from the antrum. This cannot be done efficiently from the external meatus and the opening of the mastoid, in some cases the only way to *save the hearing*.

Practitioners are alive to the dangers to life incurred by persons suffering from long-standing suppurative otitis media, but there does not seem the same appreciation of the danger to the *hearing power* which an attack of otitis media acuta involves.

I know of many cases following or during the attacks of scarlet fever, measles, or influenza, in which the hearing power has been saved by a timely opening of the mastoid antrum, and in which, if the operation had not been done, the tympana would have been inevitably destroyed.

Think of the child with one ear destroyed by suppuration, with the opposite half of the brain not properly developed, and complete education impossible; or, still worse, that of the child with both ears destroyed by suppuration, with no hearing power, and in a condition more to be pitied than the one who has facial palsy but yet retains some hearing power. Such considerations appear to point strongly to the surgeon adopting in cases of otitis media acuta (in which the profuseness or infectiveness of the discharge is likely to damage permanently the tympanum) more active measures than have been up to now commonly employed for the arrestment of the tympanal inflammation and the saving from destruction of an essential part of the organ of hearing.

For several of the cases and facts in this paper I wish to say that I am indebted to Mr. Ballance.

A COMPARATIVE STUDY OF THE TREATMENT OF DIPHTHERIA, especially in regard to ANTITOXIN.¹

By LENNOX BROWNE, F.R.C.S.Ed.

Senior Surgeon to the Central London Throat, Nose and Ear Hospital ;
late President of the British Laryngological Association, etc.

MANY claims have been made as to the advantages of the so-called antitoxin or serum treatment of diphtheria over the former methods, but no comparative statistics have been furnished beyond those of mortality. These I now propose to supply by figures derived and classified from a series of 100 cases treated by the serum from the first date of its official adoption, as noted in the wards of a Metropolitan fever hospital, having taken advantage of the regulations afforded by the Asylums' Board to follow the course and treatment of this and other infectious diseases in the wards of one of their excellently administered hospitals.

These will be compared with the figures of another series of 100 cases, treated without the serum in the same hospital at a corresponding period in the previous year, and therefore under exactly similar circumstances of situation, season, administration, and hygiene. This series of results under former methods is a somewhat more detailed *resumé* of a portion of the published statistics for the year 1894.

I have not failed to recognize the objections which may be made, and quite legitimately, against this comparative method of treating the subject. The first and most important one, viz., the absence of bacteriological diagnosis in the series of cases treated without serum, may be met by the reply that this circumstance has not been held to reflect adversely to comparisons made in favour of the new treatment ; and also by the well-ascertained fact that, in the institution in which these cases have been observed, the proportion of errors in the clinical diagnosis corrected by bacteriological methods has been so extremely small (less than five per cent.) that the discrepancy may be almost discounted.

The points offered for consideration and comparison will be found to touch on almost every particular that has been advanced in favour of serum treatment.

Series "A" refers to cases under former treatment, and Series "B" to those under serum treatment. The latter comprises 61 completed cases, and 39 who were still in hospital on April 30th, none having been admitted later than April 8th. Actual mortality is the same in both series. The serum employed is that provided by the British Institute of Preventive Medicine.

¹ This article will form part of a treatise on "Diphtheria and its Associates," now passing through the press. The importance of the subject is the apology offered for its advanced publication.—L. B.

1. Mortality at age periods.

Series "A"—27 deaths.

Series "B"—27 deaths.

Age.	Number of Cases.	Number of Deaths.	Mortality per cent.	Number of Cases.	Number of Deaths.	Mortality per cent.
Under 5	51	22	43'1	43	23	53'48
5 to 10	28	3	10'7	37	3	8'1
Over 10	21	2	9'5	20	1	5
Five cases were over 21 years of age, ranging from 22 to 36.				Eight cases ranged from 21 to 39.		

One of the strongest claims advanced in favour of serum treatment has been that infant mortality has been markedly decreased under its use, but these figures illustrate that so far as age was concerned, while the number of cases under five was considerably in excess in Series "A," the mortality was less by over 10 per cent. On the other hand, there is an improvement in the results at the more advanced age periods in Series "B."

If, however, allowance be made for cases which have proved fatal within twenty-four hours after admission, as has been very generally urged by all advocates of serum treatment, the result would not, according to our figures, be in favour of serum.

2. Mortality after deducting cases fatal within twenty-four hours.

Series "A."

Series "B."

Age.	Deaths within twenty-four hours.	Reduced Mortality.	Deaths within twenty-four hours.	Reduced Mortality.
Under 5	10	21'5	3	46'5
5 to 10	1	7'1	0	8'1
Over 10	0	9'5	0	5

At the hospital from which these figures were taken, 1249 cases of diphtheria were treated in 1893, with a total mortality of 332, or 26'4 per cent. Had allowance been made for 49 cases which died within twenty-four hours of admission, this mortality would have been reduced to 283, otherwise to 22'6 per cent. The total mortality for 1894 was 314 out of 1163 cases treated, or 27'10 per cent. With similar allowance, the mortality would be reduced by 41 cases, or to 23'4 per cent.

3. The day of the disease on which treatment was commenced.

A claim has been strongly urged for commencing the serum injections at the earliest possible moment, and elaborate figures have been prepared, showing the increased mortality in proportion to the delay in its adoption. But such a proviso should surely apply not only to diphtheria and to a particular treatment, but to every disease and to all therapeutic measures.

The following figures show that there is no warrant for special application of so general a law to the case of the serum remedy, the dates on which serum was commenced corresponding so closely :—

Day of Commencement of Treatment.	Series "A." Number of Cases.	Series "B." Number of Cases.
1	2	2
2	29	24
3	22	32
4	20	17
5	8	9
Over 5	19	16

In hospitals for diphtheria, where it is the rule for nurses who have the least symptom of sore throat to present themselves to the medical superintendent for immediate examination, and where the disease is, therefore, attacked at once, a fatal result is almost unknown, and this under the former methods of treatment. In the hospital where these observations were made, 42 cases of diphtheria have occurred in the staff during the last five years, without a single fatal result.

4. The following figures show the *prolongation of life in cases with fatal results* :—

Day of Death.	NUMBER OF DEATHS.	
	Series "A."	Series "B."
Within 24 hours	11	3
2nd	2	1
3rd	4	3
4th	3	4
5th	1	2
6th	3	1
7th	1	1
8th	1	4
9th	0	1
10th	1	0
16th	0	1
21st	0	1
32nd	0	1
38th	0	1

The average length of time before the fatal termination was 3·3 days in Series "A", whereas in Series "B" it was 8·79.

This prolongation of life has been claimed as an advantage of serum, but it is capable of a contrary interpretation, since it indicates a greater prostration of the recuperative energies, or the acquirement of something in the system that occupies a much longer time for full elimination. Thus, while in all serum cases there is a tendency for convalescence

to be delayed, in those terminating fatally, death is simply procrastinated, and the period of suffering of the patient and of anxiety to the parents is unduly extended.

5. *The site of membrane* is to be considered as an important indication of the relative gravity of the two series of cases, and although Series "A" has fewer examples of nasal diphtheria—the most fatal form—*per contra*, it has many more examples in which the membrane extended to the larynx, and a larger number of tracheotomies.

Site of Membrane.	Series "A."	Series "B."
Fauces.....	60	65
Larynx	2	0
Fauces and Larynx	16	3
Faucial and Nasal	17	28
Faucial, Nasal, and Laryngeal	1	2
Nasal	1	1
Hard Palate	0	1
Faucial and Palatal	1	0
Faucial and Buccal	1	0
Faucial and Vulval	1	0

With regard to *nasal* diphtheria, whether in association with the fauces or larynx, or both, we have found in 1000 cases, tabulated with regard to site and other items of interest, that this variety was fatal in 67 per cent.; and in the present comparison we find in Series "B" a total of 31 cases of this class, 16 of which ended fatally—in other words, 50·16 per cent. This is in favour of the serum, for under the older method of treatment, as represented in Series "A," out of a total of 19 cases 12 died, or 63·15 per cent.

In the cases in which the *larynx* was involved, in Series "A," 7 died without operation, out of a total of 18; these included one case which died within twenty-four hours of entrance to the hospital, intubation having been performed previous to admission; 4 tracheotomies were performed of which number 2 died.

In Series "B" there were 5 cases of laryngeal diphtheria, and of these 2 died; in one of the fatal cases tracheotomy was performed. These numbers are certainly too small to deal with, but evidence from other sources is distinctly in favour of serum treatment with regard to laryngeal diphtheria.

6. *The day of treatment on which the membrane commenced to separate.*

Under the old methods this point was not noted with the same attention as has been observed since it has been urged as a merit of serum treatment that the membrane separates much more quickly than formerly. Consequently, we have only 50 cases in Series "A" from which to draw comparisons. It is to be understood, with regard to the

serum series, that an injection was always made immediately on admission of the patient.

Day.	Series "A" (on 50 cases).	Series "B" (100 cases).
1	10 or 20 per cent.	1 per cent.
2	13 „ 26 „	28 „
3	18 „ 36 „	36 „
4	7 „ 14 „	14 „
5	2 „ 4 „	2 „
7	0 „ — „	1 „
12	0 „ — „	1 „

The full number of 100 is made up in Series "B" by 2 cases in which no membrane was visible, 2 in which there was further extension, and 13 in which death occurring, the membrane had not cleared.

7. *The day on which the throat was declared free of membrane.*

In Series "A" this fact was noted in only 67 of the cases, and in 92 in Series "B." Of these only one occurred in Series "A" in which membrane re-appeared, and that on the fourteenth day after admission; whereas in Series "B" there were 5 cases of re-appearance, 13 cases in which it never cleared entirely, and in 1 case it was observed as late as the thirty-ninth day after admission and the forty-first day of the disease.

Day.	Series "A."	Series "B."
2	4	1
3	13	4
4	14	9
5	14	18
6	8	18
7	6	10
8	5	2
9	1	1
10	1	1
11	1	0
12	—	2
13	—	2
14	—	2
17	—	1
24	—	1
28	—	1
39	—	1
<hr/>		
67		+ 18 as above = 92

8. As to the *temperature*, no exact comparisons can, of course, be made, but we must call attention to the fact that in diphtheria the thermometer by no means ranges high, and is always low—even sub-normal—after full appearance of the membrane, that is, after the second or third day. In no case have we seen any notable reduction after an injection of serum, as has been so frequently stated. On the contrary, there is almost always a rise, small it may be, and often of but a few hours in duration.

We have no desire to magnify the importance of this matter of fact, but we agree with the remark of Variot that an elevation may be easily overlooked unless the thermometer be used at least every four hours. In non-diphtherial cases of membranous throat, this physician has noted that each injection of serum causes a rise of temperature of from half to one degree and sometimes more.

The temperature in pure diphtherial cases, according to Louis Martin, falls after twelve hours, but had he recorded the temperature more frequently than twice a day, as his published charts only show, it is not unlikely that this fall would have been noticed to be preceded by the slight rise of temperature soon after the injection, of which it has been thought a duty to make note.

In cases in which the streptococcus is associated with the diphtheria bacillus, L. Martin notes a rapid rise of about one degree after some of the injections. An examination of his charts of complex diphtheria reveals the fact that it is the rule for the second injection to be followed by a gradual rise of temperature for twenty-four hours, whereas in purely diphtherial cases the second and subsequent doses are not, as a rule followed by elevation.

9. As to the *pulse*, after a dose of serum has been administered we find the rate somewhat increased concurrently with the rise in temperature—in one instance it went up immediately from 136 to 166; and we have been unable to detect any diminution in tension, as has been claimed by some observers. In pure diphtheria of a mild type, the first dose, according to L. Martin, at once diminishes the pulse rate; but with streptococcal associations there is a very marked increase, always after the first and sometimes after the second.

Variot has lately drawn attention to the quickening of the heart's action, cardiac asthenia and arrhythmia of the pulse, as a sequel of injection of serum.

10. *Skin eruptions and joint pains* constitute another element on which no comparison can be made, for in Series "A" rashes were practically, and joint pains absolutely, absent. In one case erythema nodosum was observed, and in another, a male aged thirty-five, eczema was present on admission. In Series "B," 38 of the cases developed eruptions which varied in occurrence from the seventh to the twelfth day, and were of the varieties which have been generally recorded. In several instances when a fresh injection was made, after an interval of some days the eruption broke out anew. In 4 cases there were joint pains.

It has been advanced by laboratory workers that these symptoms are of no importance. This opinion requires no refutation from a clinician.

11. *Adenitis* was observed in 18 cases in Series "A," and in 28 cases in Series "B."

In some instances the serum injection appeared to lead to a rapid, although sometimes only temporary, diminution in glandular enlargement where it existed on admission. The proportion of cases which went on to suppuration was about equal in the two.

In connection with this question of suppuration we may mention that there were two cases of abscess at the site of injection.

12. *Otorrhœa.*

This is a complication of admitted occurrence in the course of diphtheria, irrespective of treatment. It was noted 13 times in Series "A" and 16 times in Series "B."

13. *Renal Complications.*

(a) *Albuminuria.*—This also is a recognized symptom of diphtheria. It was found 38 times in Series "A," and 50 times in Series "B." There is no necessity to quote figures illustrating the varying quantity under the two methods, but it may be stated that it was developed in decidedly larger amounts in Series "B."

Both (b) urea and (c) phosphates have also, under serum treatment, been observed in excess of what may be called the amount normal to diphtheria.

(d) *Anuria.*—The circumstance that suppression is a symptom of not infrequent occurrence in diphtheria, whatever treatment be pursued, has been used as an argument against the suggestion that serum is responsible for its greater frequency; and the curious question has been asked why, if this be so, should anuria not occur in those cases of non-bacillary diphtheria treated by serum, it being forgotten that anuria is never witnessed in connection with pseudo-diphtheria.

However that may be, the figures show that this complication is of less common occurrence in Series "A" than in Series "B," the numbers being respectively 2 and 7. It may be added that I was particularly unfortunate in my early experience in this respect, 6 patients out of a series of 8, and *not included is the present comparison*, dying with anuria as the most prominent symptom. It is fair also to quote Washbourn and Goodall, who, out of 10 deaths, had 7 in which anuria was exhibited, and another with convulsions, probably uræmic.

(e) *Nephritis.*—During 1893, out of a total of 2848 cases treated in all the Metropolitan Asylums' Board hospitals, with 865 deaths, only 8 are reported as due to nephritis. In Series "B," out of the 7 cases of anuria, nephritis was proved to exist *post-mortem* in all the 5 in which a necropsy was allowed, as well as in 4 other cases in which death resulted from other causes. In short, in all the 9 cases in which a necropsy has been permitted, out of the total of 27 deaths, nephritis has been revealed, and sometimes in extreme degree. The peculiar conditions were as follows: the distance between each two pyramids was diminished and the apices of the pyramids flattened. In many there were hæmorrhagic evidences, while the capsule was sometimes firmly adherent.

These figures are in accordance with those of Benda, pathological prosecutor to the Urban Hospital, Berlin, who has stated that on necropsy of 39 diphtheria patients treated by the serum only 6 were free from nephritis; 8 showed severe and 25 slighter parenchymatous inflammation.

14. *Cardiac Failure.*

There was only 1 sudden death noted from Series "A" due to cardiac

syncope, whereas 4 occurred in Series "B," and here it is again permissible to quote the experience of Washbourn and Goodall, who, ascribing 10 deaths to the poison of the disease out of 61 cases of true diphtheria treated by serum, afterwards reported that all these died of cardiac failure.

At a recent discussion on the serum treatment at Munich, Rauchfuss, of St. Petersburg, is reported in the "Lancet" to have said that under antitoxin "myocarditis was more frequent; perhaps that might be due to the fact that a greater number of patients remained alive."

It is somewhat difficult to understand how this condition could be judged to be more frequent except as a result of *post-mortem* examinations.

15. Of other causes of death in Series "B," 6 were due to *broncho-pneumonia*, and 1 to *septic peritonitis*. We may here revert to the very long period in which the patient's life is held in the balance in serum treatment, the scale being in the end but too frequently turned adversely.

16. *Paralytic Sequelæ.*

In our 1000 cases, and also in the 2848 treated in the Metropolitan Asylums' Board hospitals during 1893, paralysees were noted in 14 per cent. of the cases, and this is the exact number which occurred in the Series "A" and "B." The latter, however, includes 39 cases which had, at the date of this article, only been under treatment twenty-two days. In all of these the vital prognosis is favourable, but should a similar ratio of paralysis continue the number in Series "B" will exceed that in Series "A." Baginsky remarked at Munich that "paralysis is more frequent under antitoxin than before." We do not think there has been any difference in the gravity of this manifestation in either series.

Conclusion.—When drawing attention at a meeting of the Clinical Society last December to what cannot but be considered as an increase, under the use of serum, of the most grave complications of diphtheria, viz., anuria, nephritis, and cardiac failure, I took occasion to express a hope that further experience might prove that the disadvantages of serum would be more than outweighed by its benefits. I deeply regret to be obliged to record facts which, if confirmed—and they are easily capable of being checked by parallel observations of others who may elect to make use of the opportunities which I have embraced—cannot fail to carry a contrary conviction. Whether the efficacy of the new treatment be finally accepted or disproved, I shall feel that I have accomplished a plain duty in reporting the foregoing facts as they have presented themselves, during some months of close observation in an institution which has been distinguished by its low diphtheria mortality for some years past.

While writing this article I observe that Dr. Winter, of New York, has arrived at similar conclusions to myself on almost all the points here considered.

SOME REMARKS upon so-called FOLLICULAR ANGINA, and its relation to DIPHTHERIA.

By Dr. JOHN SENDZIAK (Warsaw).

(Continued from p. 267.)

As to the local changes of the palatine tonsils, they present themselves in the form of more or less redness of the tonsils, likewise of the neighbouring parts (arches), afterwards in the form of more or less numerous yellow or whitish-grey points in the crypts, which sometimes are confluent, forming a kind of pseudo-membrane, so that it appears at first sight to be a real diphtheria, but on closer examination, absence of membranes upon other parts (*palatum molle*), and especially examination of the membranes from the bacteriological point of view, permit us to exclude diphtheria. They are atypical-transitory cases, and in these I mostly found, besides staphylo- and streptococci, the so-called pseudo-membranous bacilli, *i.e.* bacteria, which only resemble Klebs-Loeffler's bacilli by external appearance, not possessing, however, the character of these latter (*vide* the last paper of Prof. Escherich, of Graz: "Zur Frage des Pseudodiphtherie Bacillus und der diagnostischen Bedeutung des Loefflerschen Bacillus" (Berl. Klin. Woch., 21, 1893).

In most cases both tonsils are affected by the pathological process, but rarely in a like degree; sometimes, however, the process is localized upon one tonsil, generally more or less hypertrophied. Out of thirty-three cases I observed twenty-four with only unilateral affection (thirteen times on the left and eleven times on the right side).

The affection of the so-called fourth or lingual tonsil merits particular attention. Jurasz does not report such a complication. We, however, meet with it in Seifert's new and excellent monograph of the lingual tonsil ("Die Pathologie der Zungentonsille," Archiv. für Laryng., 1 Heft, 1893). This author, although he has not observed this complication himself, which he very justly explains by not having had his attention drawn to this point, cites Hagen, Fleischman, Michelson, and Gurowitsch. To these authors must be added Wróblewski (Poland), who in the year 1892 published an extensive paper upon the lingual tonsil.

Out of one hundred and thirty-three cases of acute lacunar tonsillitis I have had occasion to observe the simultaneous affection of the lingual tonsil twelve times. I am perfectly convinced that this complication must happen much oftener, but our attention is not always directed to it. This supposition I base upon the fact that only latterly have I commenced to examine every patient with acute lacunar tonsillitis by means of the laryngoscopic mirror, and since then I have found this complication comparatively often. In all twelve cases I found a more or less hypertrophied lingual tonsil, which seems to prove my opinion as to the predisposing agent, formed by hypertrophy of the tonsils for the formation of the antelacunar process. The picture presented by so-called follicular inflammation of the lingual tonsil does not differ in anything

from that which I described above for the palatine tonsils. The base of the tongue, *i.e.*, the surface between the papillæ circumvallatæ and the epiglottis (the so-called valleculæ, *i.e.*, clefts situated on both sides of the ligamenta aryepiglottida and by the ligamenta aryepiglottida lateralia, which are then more or less filled with the hypertrophied tonsil) is reddened and diffusely swollen. Sometimes single parts are more prominent—in the opening of these glands we find white-greyish, or rarely yellow, points, similar to those which simultaneously, or a little earlier, appear on the palatine tonsils.

Their number varies between two or more, generally less than on the palatine tonsils. The course of the disease is the same as above. They generally disappear together with the process in the pharynx after some days; sometimes they last a little longer. The pain on swallowing is very violent and generally localized in the region of the larynx.

As a rule, we must consider this complication to be a secondary process, descending from the palatine tonsils to the lingual tonsil. Once only have I observed on the contrary an acute lacunar tonsillitis, which had developed primarily on the lingual tonsil. The case was that of an employer, thirty-five years of age, who consulted me in October, 1893. The patient complained of violent pain in the region of the larynx, fever, weakness, and very strongly marked general symptoms. On examination I found the temperature 39° C.; the lymphatic glands of the neck swollen and painful, and in the pharynx, besides slight reddening of the isthmus faucium, no more important changes could be observed to explain this painful swallowing. Only on examining the larynx by means of the laryngoscopic mirror, I found the explanation of this symptom in the acute inflammation of the laryngeal tonsil (great redness and some discrete whitish-grey spots). Ol. ricini, antipyrin internally, and a compress over the neck were then administered. Next day the swelling remained without change, and the general symptoms were as before (fever). The submaxillary glands, especially the right one, were greatly swollen and painful to touch.

On examination of the pharynx I remarked on both (more on the right) palatine tonsils typical spots in the crypts, besides great redness and swelling of the tonsils. The lingual tonsil showed the same condition. Gargles of salol were prescribed. Next day the condition was much better—subjectively swelling less, and objectively less fever, the process on the tonsils, especially the lingual, being slighter. After some days the patient completely recovered. The examination of the pharynx by means of the laryngoscopic mirror did not reveal the slightest change. The case merits attention from the fact that a week later, after severely catching cold, violent pains in the frontal sinus appeared, and severe catarrh of the nose, with purulent discharge.

Examination showed bilateral acute suppurative inflammation of the mucous membrane of these sinuses. Thanks to appropriate treatment (catheterization), a complete recovery ensued after some weeks.

The inflammatory—*i.e.*, follicular—process being frequent on the palatine and lingual tonsils, it would seem by analogy that the so-called third—*i.e.*, pharyngeal (Luschka's) tonsil—ought to undergo the same

pathological process. Although I do not remember having read anywhere in literature such observations, I found in Grünwald's atlas of diseases of the nose and throat (1894) an illustration and description of follicular pharyngeal tonsillitis. I think, however, that in cases of acute lacunar tonsillitis the same affection of the pharyngeal tonsil must simultaneously occur, and perhaps not rarely. I have, indeed, no sufficient proof of this supposition, because I have only latterly begun to examine the naso-pharynx in this direction by means of the laryngeal mirror (posterior rhinoscopy), which, as is known, is not always easy.

I have only up to now noticed three cases of this disorder. One occurred in a girl fourteen years old. On both palatine tonsils and on a greatly hypertrophied lingual tonsil were some white-greyish points. I found on examination of the pharyngeal tonsil a marked redness and swelling and several (four or five) discrete white-greyish points. After the application of the usual remedies (gargling with salol, compress over the neck, and douching of the naso-pharynx by Schmidt's method) recovery ensued in some days. Luschka's, as well as the lingual tonsils, except for moderate hypertrophy, did not show any changes.

The following case is also interesting on account of the simultaneous affection of the whole lymphatic pharyngeal apparatus with the above pathological process. A merchant's wife, twenty-five years old, consulted me in December, 1893. For some days there had been fever and violent pain on swallowing. On examination I found the temperature to be 38.5°C .; the lymphatic glands of the neck enlarged and painful. On both palatine tonsils, which were very red and swollen, were several whitish-yellow points localized in the crypts. Similar points (spots), more whitish-grey, to the number of four or five, were situated on the lingual tonsil (also red and greatly hypertrophied). On examining the naso-pharynx with the mirror I remarked that the pharyngeal (Luschka's) tonsil was very red and swollen, and three or four discrete, circumscribed (the size of a pin's head), white-greyish points were observed. After application of the usual treatment (with addition of insufflating once a day the naso-pharyngeal cavity with aristol) complete recovery took place in a week. Except for moderate hypertrophy of Luschka's tonsil, and considerable increase of the lingual tonsil, the acute changes disappeared completely.

Latterly, I have observed one (third) case of simultaneous affection of the palatine, lingual, and pharyngeal tonsils—occurring in a business clerk, aged nineteen, who presented typical bilateral acute lacunar tonsillitis (great hypertrophy of the palatine tonsils, white-greyish spots in the crypts). Marked general symptoms were present, and very violent pain on swallowing. There was swelling and redness of the lingual tonsil, on which some whitish-grey points were observed. On the swollen and greatly reddened pharyngeal tonsil I remarked two or three similar looking spots. The course of the disease was pretty severe—especially the pain on swallowing, which disappeared only after several days under the usual treatment. Hitherto I had seen only secondary affection of the pharyngeal tonsil with the so-called follicular process. These combined cases—simultaneous affection of the lingual and palatine

tonsils—were severer and characterized by a little longer course of the disease. The pains on swallowing are not characteristic of this affection.

The headaches in both my cases were very violent, localized behind (*cephalgia occipitalis*). Locally, the process in the pharyngeal tonsil showed itself to be completely identical with that of the palatine and lingual tonsils; there was more or less considerable redness and swelling, and generally in these cases and in the lingual tonsil there was a hypertrophic process, mostly of a moderate degree.

Finally, here and there small separate white-greyish points are found, generally in small number.

We pass now to the terminations and complications of acute lacunar tonsillitis. One of these, *i.e.*, suppuration of the frontal sinus, I have mentioned above.

Comparatively often I observed simultaneous affection of the air passages (acute laryngitis and bronchitis). Jurasz also reports this complication. This author in one case saw herpes. In two cases I observed termination in suppuration (tonsillitis abscedens)—generally unilateral; typical unilateral acute lacunar tonsillitis—with fever and white-greyish points, etc.—disappeared in some days; afterwards violent pains on swallowing appeared again on the same side. This hypertrophied palatine tonsil suppurated (in one case I was obliged to open the abscess, in the second case the abscess burst). Of such a complication I do not find any remark in Jurasz's book. In literature there exists one case of follicular tonsillitis, in which a fatal ending resulted in seventy-two hours from acute infectious phlegmon of the pharynx (described by Kohn, *New York Med. Rec.*, 1893-4).

The *prognosis* in cases of acute lacunar tonsillitis is absolutely favourable. The disease generally ends favourably in a few days, not leaving any traces (paralysis, etc.).

The *diagnosis* of this disease is generally easy—the acute disease, with fever, with characteristic affection of the tonsils (white-yellow-grey points in the crypts) can be only confused with true diphtheria.

This latter differs, however, in a simultaneous affection of the other parts of the pharynx (uvula, palatum molle, etc.); the membranes themselves are more diffuse and not absolutely localized in the crypts, in the form of more or less thick greyish, or dirty pseudo-membranes. The affection of the nose, naso-pharynx, or larynx in certain cases, and further, the course of the disease (secondary paralysis, etc.) permit us to distinguish these conditions. The general symptoms, the affection of the lymphatic glands of the neck, and the infectious character do not have any distinctive signification, because they can appear in cases of both these diseases.

Although typical appearances of the tonsils in cases of acute lacunar tonsillitis do not generally leave any doubts as to the nature of the disease itself, we cannot deny that sometimes this appearance is not characteristic—that the membranes, although localized in the crypts, are more diffused. These are the so-called transitory atypical cases, and I have already mentioned them. The diagnosis in these cases is not so easy, and can only be solved by means of bacteriological investigations. Such cases I

have observed more than once, and have examined them in this direction (pseudo-diphtheritic bacilli).

Treatment.—We must first solve the very important question, as to which there is no agreement amongst physicians, viz., if in cases of acute lacunar tonsillitis the patients should be isolated or not?—in one word, if we must act as in real diphtheria. The solution of this question is found in the mutual relation of both these pathological processes. If acute lacunar tonsillitis were only a slighter form of diphtheria, as is still maintained by some authors, it is plain that all which is obligatory in the treatment of real diphtheria must be also applied to the lacunar process: namely, isolation of children affected, from the healthy from the first onset of illness, etc. But as I have above stated, this is not so, since bacteriological researches show that this process is absolutely without etiological relation with true diphtheria.

Isolation as a prophylactic method is completely unnecessary.¹ It is true that acute lacunar tonsillitis is a disease also of infectious origin, which may even appear epidemically, yet (1) cases of infection with this disease occur comparatively seldom (I have very often seen that even mothers affected, suckling children, did not infect these latter), though sometimes the contrary was the case (*vide* first of my above described house epidemics). (2) What is more important, the infection always produces, at least in my observations, the same typical pathological process—*i.e.*, the disease is absolutely benign, but never real diphtheria, and *vice versa*.

I pass now to the proper treatment. This is very simple, and is based principally on the removal of general symptoms (fever, weakness, etc.), which we obtain by giving oleum ricini, antipyrin (quinine or salol) internally, wine and nutritive diet. As to the local treatment, in my cases I have limited myself to garglings with salol (of five per cent. alcoholic solution, a teaspoonful to a glass of lukewarm water—on mixing it forms a milky fluid) or menthol; very seldom sublimate or creolin (both these remedies are very disagreeable to patients). In slighter cases simply boric acid was prescribed. Very good results, especially in the alleviation of pain, are obtained by application of the so-called “compress échauffant” over the neck, especially in cases complicated with affection of the lingual tonsil. Being generally opposed to brushings in diphtheria, I do not apply them in this disease. Once only, *experimenti gratia*, I applied pyoktanin, without, however, any particular result. Jurasz, on the contrary, warmly recommends brushings of the membranes every two or three hours with two to five per cent. of carbolic acid.

In those rare cases where simultaneously the pharyngeal tonsil was affected, I applied insufflation of aristol to the naso-pharyngeal cavity, as well as nasal douches (Schmidt's method), with boric acid, etc. Finally I will mention, in passing, that twice, though not therapeutically, but for bacteriological researches, I excised the hypertrophied

¹ Naturally I am thinking here of isolation in the strict sense of this word, *i.e.*, the removal of healthy children to other apartments, which generally, especially in poorer practice, is done with great difficulty. It is to be understood that the usual remedies of prevention, as in every infectious disease, must here also be applied.

tonsils in the acme of disease by means of the tonsillotome. This operation was absolutely without ill effect to those patients, which also would speak against the diphtheritic origin of this disease. If excision of the hypertrophied tonsils during the existence of the pathological process must be generally considered as contra-indicated, so this operation, as a prophylactic method, in my opinion, is not to be condemned.

In most of my cases previous tonsillotomy, or excision of the tonsils by means of the galvano-caustic snare (*vide* my paper, "Quelques remarques sur l'emploi de l'anse galvano-caustique dans l'hypertrophie des amygdales"—Rev. de Laryngol., 1893), was successful. If sometimes after this operation acute lacunar tonsillitis occurred, it was always of slighter degree, which could be best observed in cases where only one tonsil was removed.

LARYNGEAL STRAIN.

By N. C. HARING, M.B. (Lond.), etc.,

Hon. Assist. Phys. Manchester Hospital for Consumption and Diseases of the Throat.

IN reading the interesting discussion on "A Case of Diplophonia" (Dr. Dundas Grant, Brit. Laryng. and Rhin. Associat., Jan. 11th, 1895, and reported in this Journal, March, 1895, p. 209), it certainly seemed to me that certain muscular pareses in relation to voice-overstrain were not fully recognized.

I have observed in many cases of overstrain of the voice the following physical signs¹: The free edges of the vocal cords are bent towards the middle line, with their convexities presenting to each other. This is only noticeable on phonation, when also it is seen that the cords touch each other at a point just anterior to the middle of their length, and that the anterior and posterior portions are not perfectly approximated. As the anterior portions of the cords are often under cover of the epiglottis, and thus only the posterior gaping of the rima is to be seen, these cases are often classed under the heading of paralysis of the arytenoideus muscle.

The point at which the margins of the cords first touch is exactly the position in which nodes are found, and it is certain that, if there is much use of the cords when in such a condition, the mechanical impact would be sufficient to cause a node, and thus further impair the voice.

The explanation of this condition appears to me to be: that the crico-hyoid muscle, the tensor, is the first muscle to suffer in overstrain of the voice, and that in its weakened condition it cannot fully antagonize its opponents (principally the thyro-arytenoid), and thus, instead of being kept straight, the edge of the cord is allowed to bulge towards the median line.

I think this laryngeal picture of the cords presenting convexities to each other in conditions of laryngeal overstrain is as well marked as that of their concavities in paresis due to catarrh or to neurosis, and should be as well known.

¹ Haring—Nodes of the Vocal Cords. "Manchester Medical Chronicle," Feb. 1895.

A CASE in which the BOARD of TRADE refused a CAPTAIN his CERTIFICATE on account of DEAFNESS.

By WM. ROBERTSON, M.D.,

Surgeon Throat and Ear Hospital, Newcastle-on-Tyne.

CAPTAIN F., aged sixty-three years, South Shields, some months before the action taken by the Board of Trade attended as an out-patient at the Throat and Ear Hospital, Newcastle-on-Tyne, when the following history and observations were taken.

He complained of having been deaf for fifteen years, the deafness being of gradual onset, attended by slight vertigo, of a temporary character, and tinnitus aurium. Examination of the nose showed a prow-shaped spur in the right nostril, situated far back, and indenting the inferior turbinated body of the same side. The mucosa of the nose was infiltrated throughout. The post-nasal mucosa was extensively infiltrated, especially inferior to the Eustachian openings, where, on the right side, there was a dense Eustachian synechia. On the fauces behind the posterior pillars on each side there were thick bands of granular pharyngitis, which was also present in the oro-pharynx.

Right Ear.—Meatus at its inner extremity slightly reddened, and containing a layer of cerumen; on removing this the posterior half of the membrana tympani was found to be the seat of a flat mass of granulation tissue, which bled on touching it. The interior part of the membrana tympani nearly normal. No light spot. On exhausting the meatus the malleus was found immovable. The handle of the malleus was streaked with injected vessels, giving it a flamingo-red appearance.

Left Ear.—Meatus as in other ear. The membrana showed cicatricial changes, more especially one in the form of a triangular band, with its apex fixed to the umbo, and extending circumferentially and thus hampering the movements of the malleus. On exhausting the meatus both the membrana tympani and malleus became freely movable.

With the Eustachian catheter it was found that the right tube was almost totally obstructed, both as regards air and the bougie; left, more freely permeable.

The Hearing Tests.—The patient could not hear a loud voice at all. Bone conduction was *nil*. C⁴ (2048) could just be heard for a moment opposite the right meatus. Low notes, *nil*.

The report of Mr. Denby, the solicitor to the Board of Trade before the Local Marine Board, South Shields, was as follows:

“The Board found that Captain F. was unfit to discharge duties by reason of his deafness, and they stated that they hoped the Board of Trade would regrant him his certificate in case he recovered from his deafness, but that in the meantime they suspended it. They do not therefore cancel the certificate, and they did not name a definite time of suspension, but this does not seem to be necessary as the certificate is suspended until the man gets better of his deafness and applies for

"it. The evidence of the doctor was that he was not likely to get better.
 "Dr. Robertson, Surgeon to the Newcastle-on-Tyne Throat and Ear
 "Hospital, and Dr. Baumgartner, Surgeon to the Newcastle Police
 "Force, examined the man in consultation, in Newcastle, to the effect
 "referred to, etc."

Remarks.—All the indications go to prove that in this man's case there has been first a middle-ear catarrh of a sclerosing nature leading up to a similar condition in the labyrinth. From the continual tinnitus we might suppose the existence of bilateral ankylosis of the stapes in the oval window and thickening of the round window. For the rest, atrophy of the auditory nerve from inaction might be suggested. The presence of the synechiæ round the Eustachian tube openings carries the etiology still further back — namely, to the presence of adenoid growths in youth.

SOCIETY MEETINGS.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held on Wednesday Evening, Feb. 27th, 1895.

Dr. D. BRYSON DELAVAN, *Chairman.*

SECTION OF LARYNGOLOGY AND RHINOLOGY.

Exhibition of Instruments.

Dr. A. RUPP exhibited a small instrument devised by a patient, a gold and silversmith, for the purpose of inhaling carbolic acid or creosote, and for mitigating the irritation of acid fumes incident to his work when soldering gold or silver, etc. The instrument consisted of two small silver cups, formed so as to fit the nostrils, and connected by a gold band. The cups held a small piece of sponge, which carried a drop or two of carbolic acid or creosote. It but slightly interfered with respiration.

Dr. D. H. GOODWILLIE exhibited a metal band for the head mirror, made up of links three inches long, and capable of being lengthened or shortened at will. Also a metal handle for the laryngeal mirror. Both of these instruments could be readily kept aseptic.

A Case of Angioma of the Nasal Septum.

Dr. W. FREUDENTHAL: A woman, twenty-two years old. Following a traumatism, about nine months ago, she began to suffer from epistaxis, and her nasal breathing was obstructed. The bleeding continued, but she did not seek medical advice until three months ago, when a flat tumour on the front part of the nasal septum about double the size of a cherry was found. An attempt made to remove it produced free hæmorrhage. The patient was then sent to the hospital and the growth removed completely. The hæmorrhages, however, continued, the patient bleeding

several times each day. Under the microscope, the growth proved to be an angioma.

The CHAIRMAN said that these cases were hard to deal with, but not very unusual. Many have been reported by American writers, as the literature of the last fifteen years would show. Several similar cases had come under his observation.

Dr. JONATHAN WRIGHT : Angiomata are probably the most common of all benign tumours of the septum. Had sections of three tumours of this character removed from the septum.

Dr. JAMES E. H. NICHOLS had a case now under observation in which there was quite a large angioma on the right side of the septum, though not bleeding as freely as the one shown.

Multiple Papillomata of the Larynx.

Dr. WALTER F. CHAPPELL exhibited a little girl, first presented to the section last May. At that time the larynx was filled with papillomata, and tracheotomy had just been performed, owing to an attack of acute catarrhal laryngitis. During the summer the child was kept in the hospital, and in October it was found that the growths in the posterior commissure and on the cords had disappeared, although she had received no treatment excepting that the tracheotomy wound had been kept open. Two growths still existed, although they were smaller than before ; one in the subglottic region and one in the anterior commissure. As the child's health was poor, owing to her prolonged stay in the hospital, it was decided to remove these at once. It was now four months since the patient had left the hospital, and there had been no return of the growths.

Dr. J. W. GLEITSMANN said that, on inspection, the child's larynx appeared to be absolutely normal at present. The cords were clear and freely movable.

Dr. WENDELL C. PHILLIPS believed that in cases of multiple papilloma of the larynx the growths were frequently attached not only to the vocal cords, but also in the subglottic region. In one case coming under his observation, in which thyrotomy was performed—the patient having been exhibited here at a previous meeting—this was proved by actual observation.

Treatment of Laryngeal Tuberculosis by the Application and Sub-mucous Injection of Beechwood Creosote ; Description of an Automatic Laryngeal Syringe.

Dr. WALTER F. CHAPPELL : The results obtained thus far by the internal administration of creosote in pulmonary tuberculosis have probably been more satisfactory than those produced by any other drug. The treatment of tubercular disease of the larynx with creosote, however, has not received much attention. For this purpose, aqueous and alcoholic solutions of the drug have not been satisfactory, and oily solutions are to be preferred, as they modify the unpleasant character of creosote, and cling for a longer time to the surface to which they are applied. Castor oil has been found especially serviceable, on account of its viscid and

tenacious properties. After considerable experimentation, I have found the following mixture most satisfactory for my purpose :

Creosote	1 to 2 dr.
Ol. ricin.	3 dr.
Ol. gaultheriæ	3 dr.
Ol. hydrocarbon	1 dr.
Menthol	grs. x.

In this combination it forms a clear, non-irritating fluid, with a very agreeable odour and taste, which may be either sprayed into the larynx or applied with a laryngeal applicator. In the milder forms of tubercular inflammation of the larynx, with a very slight evening rise of temperature, topical applications of the drug may suffice to relieve the symptoms, but when there is active ulceration, with high evening temperature, sub-mucous injections should be made. Before the treatment is applied the larynx should be thoroughly cleansed, and this is followed by the application of a ten per cent. solution of cocaine. In the ulcerative stages of tubercular inflammation of the larynx, a solution of creosote, one drachm to the ounce, can be employed in the form of a spray daily. A slight burning sensation follows the application, but this only lasts a few moments. Careful judgment is required in order to determine how often the submucous injections should be made ; as a rule, one every five or six days is sufficient. The injection should be as superficial as possible, and for this purpose the ordinary hypodermic syringe, attached to a long needle with the laryngeal curve, can be employed. In order to facilitate the procedure, however, and render it more exact, Dr. Chappell had devised an automatic laryngeal syringe. In order to accurately measure the depth of the injections, a rubber casing is drawn over the needle. The solution injected may be either warmed or not. One drop is usually injected at a time. If possible, the needle should not be withdrawn for a few moments. There is little or no hæmorrhage following the injections. The mucous membrane becomes tense and somewhat redder, but this subsides within a few days. The injections stimulate granulation and arrest progressive ulceration. After making the injections, the larynx should be kept as clean as possible, and sprayed every day with a weak solution of creosote.

The benefits to be derived from such treatment, which should be combined with the internal administration of creosote, good hygiene, etc., are as follows :

1. It relieves the dysphagia, dysphonia, and cough in the primary stages of laryngeal tuberculosis.
2. Infiltrations and hypertrophies of the larynx disappear in some cases after persistent treatment.
3. If the pulmonary disease is very active, early treatment may arrest the laryngeal inflammation, or limit subsequent ulcerations.
4. Single tubercular ulcerations may be healed, if not too deep.
5. In the more active stages, the treatment stimulates granulation, arrests ulceration, prevents the profuse discharge and unpleasant odour, and relieves the distressing laryngeal symptoms.

(In connection with his paper, Dr. Chappell presented a number

of patients in whom he had employed this treatment with marked success.)

Dr. BEVERLEY ROBINSON had had no experience with this method. Local applications of menthol, guaiacol, and other substances to the larynx have been made by different operators, and fairly good results have been reported. In the cases shown by Dr. Chappell, the results appeared to be remarkable. Personally, his experience with these cases of laryngeal tuberculosis had been very unsatisfactory; they had been difficult to treat, and the results had been unfavourable. Where the disease was more particularly confined to the larynx, harsh local treatment usually gave rise to an amount of suffering which was not compensated for by the results achieved.

As to the use of creosote, he considered it beneficial not only in pulmonary conditions, but also in laryngeal disease, when properly applied. During the past two years he had employed inhalations of creosote in pulmonary tuberculosis with very good results. His present method of treatment was to keep the patient in an atmosphere of creosote for from six to eight hours daily. In some cases the inhalations gave rise to headache, or other disagreeable symptoms, and could not be continued so long. The solution he employed contained one drachm of beechwood creosote to an ounce of alcohol, and of this a teaspoonful is added to a pint of hot water, which is kept simmering in the room. In a number of cases the laryngeal symptoms had been favourably modified by this treatment. It is undesirable to make the patients absorb more than a given quantity of the drug within a certain limited period of time. If used in excessive quantities, it was apt to irritate the kidneys. The treatment outlined by Dr. Chappell seemed to possess distinct advantages over other methods of local medication, and certainly deserves a trial. The submucous injections, however, he did not approve of.

Dr. ANDREW H. SMITH said that the first patient presented by Dr. Chappell had been under his care for a time at the Presbyterian Hospital, and in that case the results of the local treatment were very favourable indeed. It seemed that a very essential part of the treatment was the introduction of the creosote below the mucous membrane. The internal administration of the drug, local applications, or inhalations, could not answer the same purpose. From what had already been accomplished by it, we might hope for much more in the future. It might be well also to employ it in other forms of tuberculosis—for instance, in lupus.

Dr. CHARLES H. KNIGHT thought that this method of treatment must still be regarded as an experiment. Dr. Chappell's results thus far were encouraging, but all had seen cases of laryngeal tuberculosis do well temporarily under other methods, and, indeed, apparently recover. It should be remembered that, even if we relieved the laryngeal condition, the tubercular diathesis still remained, and that healed tubercular ulcers of the larynx were prone to break down. At the same time, it was certainly our duty to adopt every resource which offered a chance of relief from one of the most distressing manifestations of tuberculosis.

Dr. BEVERLEY ROBINSON agreed with Dr. Knight that, in these cases of laryngeal tuberculosis, we could not hope for more than a

temporary benefit by any form of local treatment. He was strongly inclined to believe that inhalations of creosote exerted a decided influence on the local condition through the general circulation. Furthermore, the drug introduced in this way through the respiratory tract was not likely to produce injurious effects on any of the bodily organs, such as might occur if administered in large doses internally.

Dr. W. K. SIMPSON : In considering the curability of laryngeal tuberculosis, we should look on it as a local manifestation of a constitutional dyscrasia. Success in treatment would depend on our ability to localize our efforts to the laryngeal deposit. In speaking of creosote, it had not been definitely determined as to its immediate action on tubercular tissue, and before we could hope to derive any positive advantage from its use in laryngeal tuberculosis, the point of its specific destructive effect on tubercular tissue must be settled.

Dr. ROBERT C. MYLES : The method of treatment described by Dr. Chappell appeared to have a wonderful effect. In many of these cases the tubercular deposit was underneath the surface of the mucosa, and if creosote would cure them, that was the place to put it. For this purpose, the syringe described by Dr. Chappell, with the rubber casing over the needle to graduate the depth of the puncture, was quite perfect. Heryng, by his method of treatment, reported twenty cures out of 270 cases, which were carefully selected out of about 1000. The only case that the speaker had seen, which was accompanied by proper evidence and was definitely cured, was the one Dr. Gleitsmann presented a few months ago.

Dr. DELAVAN : While fully alive to the extreme gravity of the disease in question, the Chairman was firmly convinced that cases of tubercular disease of the larynx had been cured. He had seen them recover under treatment, and, moreover, spontaneously, under improved climatic conditions. His own experience, combined with the testimony of others, had made him certain that tubercular laryngitis—that is, a disease characterized by thickening of certain tissues of the larynx, a peculiar form of ulceration, and the presence of tubercular bacilli—had been successfully eradicated. He saw no reason, therefore, why any plan of treatment which seemed to be an improvement over other methods should not be looked upon with respect, and given a fair trial. He thought that the value of relieving these patients was not always appreciated. The tendency was to at once conclude that little could be done for them—a pernicious sentiment, which retarded progress in the study of the disease. He agreed with Dr. Simpson that we should first ascertain whether the tubercular disease could be arrested by any process, and, secondly, whether creosote exerted any specific influence on the tubercle bacilli. The first question has been settled beyond dispute. Local tubercular disease, including tubercular laryngitis, had been cured. If the creosote treatment was easier than some others, less irritating to the patient, more productive of beneficial results, by all means let it be tested.

Dr. CHAPPELL had been surprised at the results of this method of treatment. He did not claim that it was superior to any other method.

The results in the cases shown to-night were similar to those claimed for creosote in the primary cases of pulmonary tuberculosis. If we could only relieve the distressing symptoms of these patients, we were doing much.

SIXTY-SIXTH CONGRESS OF GERMAN NATURALISTS AND PHYSICIANS, VIENNA.

Addendum by Dr. B. GOMPERTZ ("Monatsschrift für Ohrenheilkunde"),

ALTHOUGH the reports of the discussions were taken from the manuscripts handed in by the speakers, Drs. Reinhard and Scheibe are desirous of making an addition to their remarks, for which we willingly find room.

These remarks have reference to the discussion upon my paper "On the Results of a Conservative Method of Treatment in Chronic Suppuration of the Upper Cavities of the Tympanum." Our *confrère* REINHARD draws my attention to the fact that the sentence beginning with the remarks (JOURNAL OF LARYNGOLOGY, April, 1895, p. 323) "Suppurations limited to the attic were, in Schwartz's clinic, treated in the conservative way," would be more accurately expressed to the effect that "not all cases of attic suppuration were from the outset treated by operative methods; that he had seen cases at Hallé, in which the suppuration was entirely cured by means of irrigation with the tympanic catheter. Such cases were, however, rare, and in by far the larger majority there was associated an implication of the antrum of the nature of caries, or of cholesteatoma formation, which ought only to be treated by operative measures, and this owing to the great danger to life which the condition threatened."

Dr. SCHEIBE wishes the meaning of the short report of his remarks (JOURNAL OF LARYNGOLOGY, April, 1895, p. 323) to be rectified in the following way: "Scheibe has treated about sixty cases of chronic middle-ear suppuration with cholesteatoma formation in the upper tympanic cavities, and in about fifty per cent. a cure was effected by simple conservative means. On the occurrence of serious symptoms, such as peristitis, etc., as also particularly in those cases in which the fætor does not disappear under continued conservative treatment, he insists upon a permanent free opening being made into the upper tympanic chamber. . . . He insists further that a comparison between the results of the conservative method and those of the operative (extraction of the ossicles) can only be made when the diseased condition in both cases is identical from the outset. Injection and insufflation with the tympanic tube should only be employed in cholesteatoma of the upper tympanic chambers; extraction of the ossicles, on the other hand, in other suppurations of the middle ear."

Prof. GRUBER desires to say that Prof. Politzer's remarks were not a direct contradiction of his, as would appear from the report, but that

Prof. Politzer mentions that in one such case a certain amount of hearing power was present.

Prof. POLITZER desired to correct the remarks made by Prof. Habermann in the discussion upon the administration of his preparations illustrating a primary disease of the capsule of the labyrinth, in so far as Prof. Habermann had not stated in the discussion that he disagreed with Prof. Politzer's opinion as to the interpretation of the appearances, otherwise Prof. Politzer would have given his reasons in support of his views contrary to those of Prof. Habermann in the discussion.

[We are glad to be able to reproduce the above remarks, because to those who have taken a serious interest in the discussions at this important congress these expressions of the after thoughts of the speakers cannot but be of the greatest value. Remarks uttered during the hurry and excitement of a meeting do not always render so clearly as might be desired the exact ideas which the speaker really wishes to convey, and this without any imputation on the honesty or accuracy of either speaker or reporter.—ED.]

Dundas Grant, Trans.

PROCEEDINGS of the LARYNGOLOGICAL SOCIETY of LONDON.

Ordinary Meeting, December 12th, 1894.

Double Abductor Paralysis of Uncertain Origin, associated with Cystic Bronchocele and Dyspnœa; Operation; Improvement.

Mr. A. A. BOWLBY showed a patient, a man aged sixty, who was admitted into St. Bartholomew's Hospital on March 17th, 1894, on account of dyspnœa and bronchocele.

He said that the enlargement of the thyroid gland had existed for about two years; that for about three months he had suffered from some difficulty in swallowing, and for a month from difficulty in breathing. He had had several attacks of sudden and urgent dyspnœa.

Examination showed a very large thyroid cyst, situated on the left side of the neck, and about as large as a cocoanut. The larynx and trachea were a good deal displaced to the right of the middle line. The thyroid gland was not itself hypertrophied to any appreciable extent. Voice not affected, except that it was not strong; swallowing decidedly difficult and slow. Laryngoscopic examination showed double abductor paralysis, the cords not separating in respiration more than one-eighth of an inch.

On March 22nd the cyst was removed by operation without trouble, and the wound healed throughout by first intention. The dyspnœa and dysphagia were immediately relieved, and three weeks later the patient was discharged. He had one slight attack of dyspnœa a few days afterwards, but since then had had no return of such attacks.

His breathing was now quiet, but on exertion he was "short of breath." His voice was normal. There was no alteration in the condition of the cord. During inspiration there was a lozenge-shaped aperture between the anterior attachments of the cords and the vocal processes, and a smaller and similar shaped aperture between the vocal processes and the inter-arytenoid mucous membrane.

There was no evident cause for the paralysis, and no sign of tabes dorsalis or of any cerebral affection.

Aneurism of the Aortic Arch compressing the Left Pneumogastric and Recurrent Laryngeal Nerves and the Trachea, and associated with Abductor Paresis of the Right Cord.

Mr. A. A. BOWLBY showed a specimen taken from a patient, W. S., aged sixty, sent by Dr. Furber of Oxted, on November 24th, 1893.

Patient had had some difficulty in breathing for a year, but it had not prevented him from doing his work. Four weeks before he came to the department for diseases of the throat at St. Bartholomew's Hospital, he had partially lost his voice, and since that time he had continued to be hoarse, and his difficulty in breathing had increased. There had been no difficulty in swallowing.

The patient was a very large, heavily-built man of about seventeen stone in weight. His breathing was not hurried when he was sitting still, but he said that he could not walk without suffering from shortness of breath. There was slight stridor.

No swelling was visible in the region of the air-passages, and the fauces and pharynx were natural. The left vocal cord was almost fixed in the cadaveric position, neither abduction nor adduction being complete. The right cord was but little affected, although it was thought that abduction was sluggish. Otherwise the larynx appeared quite normal. No cause for the paralysis, and no evidence of either disease of the central nervous system or of any thoracic tumour or aneurism could be detected. As respiration was not dangerously interfered with, no operation was advised, and the patient was not seen again until December 8th. He was then much worse, the breathing being very laboured, and stridor well marked, with a good deal of cough and expectoration of a considerable quantity of mucus.

The left cord was found to be completely paralysed, and fixed in the cadaveric position, while the right cord was very imperfectly abducted, the abduction movement failing to place the cord quite as far from the mid-line as its paralysed fellow. The dyspnœa appeared more than could be accounted for by the deficiency of space in the larynx, but no evidence could be detected of any pressure on the trachea.

The patient was put to bed and kept on fluid diet, with steam inhalation and expectorants, but without real relief to the dyspnœa. Two days later he had several severe attacks of dyspnœa, which were transient, and on December 12th, after consultation with Mr. Butlin, tracheotomy was performed without anæsthesia.

The operation gave but slight relief, however, but it was now concluded that there must be some intra-thoracic pressure, such as had been

suspected from the beginning. Two days later the patient had an attack of syncope, and suffered from similar attacks on subsequent days. Death occurred suddenly from cardiac syncope on December 17th.

The *post-mortem* examination was made by Mr. James Berry, to whom he was indebted for the great care with which all the affected parts have been removed and dissected. The abdominal viscera were normal. The right lung was œdematous and congested. The whole aorta was dilated, and just beyond the origin of the left subclavian artery a sacculated aneurism commenced, involving about four inches of the length of the vessel. The sac itself was about four inches wide by two and a half inches broad, and extended chiefly in a backward direction and a little to the left side. It had slightly eroded the third and fourth dorsal vertebræ, and had pushed its way between the trachea and œsophagus, displacing the latter considerably to the left, and flattening it. The trachea was compressed from a point about two inches below the cricoid to the bifurcation of the bronchi, the seat of maximum pressure being just behind the manubrium sterni, where the tracheal walls were only a quarter of an inch apart.

The right pneumogastric and recurrent laryngeal nerves were found to be quite free from all pressure, separated from the sac by an interval of about three-eighths of an inch; they lay in normal loose connective tissue.

The left pneumogastric and recurrent laryngeal nerves lay stretched, flattened, and adherent over the front of the sac. They had evidently been subjected to very severe compression.

The interest of this case is mainly in the paresis of the right cord as a sequel to pressure on the left pneumogastric nerve. The dyspnœa was chiefly the result of tracheal compression, but the laryngeal aperture was also certainly diminished. The aneurismal sac did not touch any part of the thoracic parietes with the exception of two vertebræ; hence the absence of physical signs during life could be easily understood.

Mr. DE SANTI suggested that intubation might have been employed with advantage in this case in lieu of tracheotomy.

The PRESIDENT observed that the case taught several lessons. Double paralysis caused by pressure upon one vagus was very rare, but the course of events in this case had borne out the truth of the law as to the earlier affection of the abductor fibres. Where the source of pressure was within the chest, it was advisable not to commit oneself to a promise of relief by tracheotomy, owing to the possibility of mechanical pressure obstructing the trachea at a lower level.

Dr. MACKERN (Buenos Ayres) mentioned a case of double abductor paralysis in a tubercular patient, which recovered completely under iodide of potassium and electricity.

Chronic Laryngitis.

Mr. BUTLIN showed the case of James D., aged thirty-five, regimental bandsman (wind instrument), first seen on November 30th, 1894, suffering from aphonia. The voice, previously strong, had begun to get weak one year and nine months previously, but fifteen months ago it became suddenly aphonic, and had so remained.

The patient had syphilis, primary and secondary, five years ago, but without sore throat, and the skin showed definite signs of former syphilitic lesions. In his throat he complained of occasional choking sensations, and difficulty of breathing, coming on at night, about twice a week. The disease affected the true cords, which were red and thickened. There were several outgrowths on each cord, especially towards the commissure. One of these, which hung below the glottis, flapped up and down during inspiration.

The question of diagnosis lay between syphilis, of which there was a past history, tubercle, of which there was no history and no other symptom, and multiple papilloma.

Tracheotomy Tube worn for Eleven Years.

Mr. RICHARD LAKE exhibited a silver tracheotomy tube which had been worn by a patient for eleven consecutive years. The outer tube was much eroded.

Foreign Bodies in the Air and Food Passages.

The PRESIDENT showed several cases of foreign bodies removed or expelled from the air and food passages. These were—

1. A piece of holly-wood removed from the nostril of a child of four.
2. A pin removed by forceps from the aryteno-epiglottidean fold of a boy of thirteen, where it had stuck for many months.
3. A counterfeit earring which first was lodged underneath the left vocal cord, and afterwards penetrated into a bronchus on the left side of the chest, whence it was expelled by coughing.
4. A blade from a tooth-forceps removed after tracheotomy from the right main bronchus of a young woman.
5. Two halfpennies removed from the glottis of small children who had swallowed them. (A specimen was also shown illustrating the results of coins remaining undetected in the œsophagus.)
6. A piece of meat, with a long sharp bone attached to it, removed from the œsophagus of an adult.

The history of all these cases, some of which had previously been reported, were detailed.

Mr. BUTLIN mentioned a case of pleuro-pneumonia following the impaction of a foreign body, which had recently ended fatally.

Dr. BRONNER observed that the rule given in the text-books did not seem to be justified. They generally advised waiting until definite symptoms appeared, but he thought there should be no delay after the diagnosis was once made certain.

The PRESIDENT agreed that no foreign body ought to be allowed to remain in the air passages, but it was sometimes better to try the effect of complete inversion of the patient if the foreign body was round and likely to be expelled by gravitation.

Fibrosis of the Thyroid; Partial Thyroidectomy, Tracheotomy, and Dilatation of the Stenosed Trachea.

Mr. WALTER G. SPENCER exhibited a patient, a pale, thin, domestic servant who had always lived in London. More than seven years ago

her parents had noticed a soft swelling in the region of the thyroid, which gradually got smaller and harder. With this decrease difficulty in breathing came on.

Her mother had had for years a soft thyroid tumour at the junction between the isthmus and the right lobe, which was either a flaccid cyst or an adenoma. When she first attended as an out-patient at the Westminster Hospital the thyroid gland appeared of normal shape and size, but it was of stony hardness. The pulse was 130 to 140 per minute, but without exophthalmos. There was stridor, loudest in the trachea at the level of the isthmus, but heard over the whole chest. There were no signs of phthisis. The stridor gradually increased, cyanosis became marked, and the pulse was never less than 130.

The duration of the affection and the decrease in the size of the thyroid supported the diagnosis of calcification of a formerly enlarged bronchocele.

On April 11th, 1894, a median incision was made down to the isthmus. The texture of the isthmus when cut into was that of the hardest fibrous tumour, but there was no calcification. In spite of careful attempts no line of demarcation could be made out between the isthmus and the trachea; therefore the isthmus and the adjacent parts of each lateral lobe were shaved off from the trachea, leaving a portion of the gland on either side about as large as the end joint of the thumb. The trachea thus exposed felt like a soft tube, and was sucked in and blown out by inspiration and expiration. The cartilaginous rings had softened or disappeared. As the breathing was none the better for the removal of the isthmus, the trachea was opened immediately below the cricoid cartilage, where the rings were natural. On retracing its sides the lumen was seen to be narrowed to a chink below, and so the trachea was incised longitudinally downwards through the part which had been in contact with the thyroid until cartilaginous rings were again reached. The mucous membrane appeared normal, being merely thrown into folds in the narrow part. A Parker's silver tracheotomy tube was inserted, and the breathing became free. After the patient had worn the tube for a fortnight she was gradually able to discard it, so that at the end of a month from the operation the wound in the neck had entirely closed. Six months after the operation the girl was in better health, although still thin; her breathing caused her no trouble, but a little stridor could be heard in the trachea. The remainder of the gland had not altered. The pulse was still 120 per minute.

On examination of the tissue removed a part showed, under the microscope, thyroid alveoli in no way dilated, and containing normal colloid matter, but the alveoli were separated from one another by an increased amount of fibrous tissue. In the rest of the material removed all glandular structure had been replaced by dense fibrous tissue without any sign of sarcomatous elements or of cysts, but showing vessels with well-marked walls.

Between these two parts the thyroid alveoli were smaller in size and filled with epithelial cells, or clumps of epithelial cells surrounded by small cells marked the position of a former alveolus, or lastly groups of

small round cells alone were visible. The fibrosis seemed to have spread inwards from the capsule of the gland.‡

The longitudinal division of the stenosed trachea might possibly result in a persistence of the dilatation, as in the case of other strictured tubes, and the unaltered condition of the mucous membrane might be considered as favourable to the maintenance of the dilatation. The rapid pulse would seem to date from the time when an enlarged bronchocele was present. It was remarkable that it should remain rapid when so much of the gland had been put out of action. On the other hand, no myx-œdematous symptoms had supervened, for doubtless there was some active thyroid tissue still left, and the stony hardness of the gland differed widely from the soft and withered gland in myxœdema.

The most important feature, from a surgical point of view, was the fact that the trachea had become intimately included in the disease and the cartilaginous rings softened, whereas the clinical and microscopical features of the case presented no signs of malignancy.

Fibrosis or fibrous degeneration of the thyroid gland must be a very rare disease, for no case of the kind appeared to have been yet put on record. Ziegler alone simply mentioned the occurrence of the disease. Fibro-sarcoma had been met with—*e.g.*, by Mr. Bowlby ("Lancet," 1884, II., 1001)—from which this case was distinguished by the clinical course of the disease and by the microscopical appearances of the portion removed.

Paralysis of Left Vocal Cord associated with Paralysis of Soft Palate (? of Diphtheritic Origin).

Dr. SCANES SPICER showed the case of C. H., aged thirty-four, stableman, who had complained of hoarseness and regurgitation of fluids through the nose on attempted swallowing since the middle of September, 1894.

Illness commenced with an "ordinary cold." There were no patches or ulcers on the throat at the time, but little soreness and pain on swallowing at first. The voice was distinctly nasal in character, and patient had dyspnœa on exertion. Hand-grasp good and equal on both sides. Knee-jerk, elbow reflex, and pupil reflexes normal. Mechanical stimulation of palate felt, but no reflex contraction. Laryngoscope showed left vocal cord in cadaveric position almost entirely immobile. Nothing abnormal detected in chest. No history of syphilis, influenza, or diphtheria to be obtained.

The patient was gradually improving under five drops of liq. strychniæ, large doses of iodide of potassium for some weeks having had no effect.

Dr. BALL considered that the paralysis of the soft palate and left vocal cord was probably diphtheritic in origin.

Dr. HALE WHITE had seen somewhat similar conditions associated with lead poisoning.

Dr. MCBRIDE thought it possible that some changes might have been set up in the muscles supplied by the spinal accessory nerve.

Aneurism of the Aortic Arch with Paralysis of the Right Vocal Cord.

Dr. SCANES SPICER showed a specimen obtained from a sailor, W. S., aged forty-eight, who was under treatment at St. Mary's Hospital under

the charge of Dr. David B. Lees and the reporter, for severe attacks of spasmodic dyspnoea, hoarseness, and breast pain.

The laryngoscope disclosed paralysis of right vocal cord, while left vocal cord remained freely movable throughout the illness. Physical examination of the chest showed undue prominence of right upper chest front, dulness, and stridulous breathing.

Intubation, venesection, and injections of morphia and atropin gave relief from time to time. The patient died from cardiac syncope of gradual onset.

The specimen was a saccular aneurism of the aortic arch involving the second and third parts, and due to the yielding of the posterior wall of the vessel. The *left* recurrent nerve appeared stretched over the back of the sac. The tumour had displaced the lower part of the trachea backwards and to the right, in such a way that the convexity of the deflected trachea pressed on the *right* recurrent and pneumogastric nerves. The tumour also bulged into the trachea, and opened into its lumen. The large vessels were not involved in the aneurism, as their site of origin was anterior to that part of the wall forming the tumour.

Anchylosis (?) of the Left Arytenoid Joint.

Mr. SYMONDS showed the case of Eliza P., aged fifty-six, seen at Guy's Hospital for hoarseness in May, 1894. The condition had existed more or less for a year, and when seen again in November it was unchanged.

The whole of the left half of the larynx was fixed, the arytenoid and cord showing no movement on phonation. The cord lay in the median line, and the right moved up to it. The right arytenoid moved up to, but did not cross the left. The line of the glottis where the cords were in contact was oblique.

There was no evidence of destructive ulceration of the cord or arytenoid, and no cause of pressure could be discovered in the neck or elsewhere. The patient could swallow ordinary food with ease. A bougie passed readily without encountering obstruction. There was no sign of syphilis. The patient was stone deaf, and of an excitable temperament.

The diagnosis lay between paralysis and fixation of the arytenoid, and Mr. Symonds inclined to the latter view on account of the position of the arytenoid, the oblique line of the glottis, and the fact that the moving arytenoid did not displace the immovable one.

Dr. PERCY KIDD had seen this case at an earlier stage, and thought the fixation of the cord was mechanical rather than paralytic, due to anchylosis of the crico-arytenoid joint.

Tubercular Ulceration of the Epiglottis treated by Curetting and Lactic Acid.

Mr. SYMONDS exhibited a patient, Mr. E. S., aged twenty-nine, who complained in August, 1891, of some pain in swallowing, the expectoration of much frothy mucus, alteration of voice, and nocturnal cough. On examination the epiglottis was thickened, red, and shiny, especially on

the right side; mucus entirely concealed the laryngeal view. On the posterior surface of the epiglottis was extensive ulceration, more particularly on the right half and edge. The change of voice was due to the presence of mucus only. He had lost two stone in two years, but considered himself in good general health. There was no family history of tubercle and no evidence of pulmonary disease.

The disease seemed so extensive that at first he was treated with sedative powders and general remedies. In five weeks he had improved a good deal, and had gained in weight. A better view obtained showed that the left arytenoid was involved and the ary-epiglottic fold.

October 31st.—The epiglottis was freely curetted and lactic acid at once applied.

November 24th.—The local condition was much improved; he could swallow well and eat anything. He had been curetted four times. All expectoration had disappeared. He had gained nine pounds in the three months.

December 5th.—Some recurrence took place, giving rise to dysphagia, due to increased swelling of the ary-epiglottic fold. This was scraped well and rubbed with lactic acid.

January 12th, 1892.—Both cords were well seen owing to the greater mobility of the epiglottis, and were healthy. A small smooth swelling remained in front of the left arytenoid. The epiglottis looked irregular and nodular from cicatricial contraction.

November, 1892.—A small grey surface appeared in the left side of epiglottis. This was curetted off and lactic acid applied.

The treatment never interrupted the patient's business engagements. Since the last date he had continued well.

Dr. CLIFFORD BEALE referred to the occasional occurrence of spontaneous healing of localized tubercle of the epiglottis without any special treatment.

Mr. BUTLIN mentioned the case of a boy with destructive ulceration of the epiglottis, which healed completely under the simple application of iodoform.

Dr. MCBRIDE quoted a case of spontaneous cure, in which the pharynx had been affected with a pale bluish œdema similar to that seen in the larynx in tubercular cases. Lactic acid was applied, but not very regularly, and the swelling disappeared. No bacilli were found in the case.

Mr. CRESSWELL BABER referred to a case of apparently tubercular disease of the epiglottis, and commented on the great variety in the course taken by laryngeal tubercle in different cases.

Mr. SYMONDS pointed out that in his case relief was rapid after the conditions had remained unaltered for six weeks.

The PRESIDENT observed that without the presence of bacilli it was not always possible to be sure of the tubercular nature of some cases.

Pachydermia Laryngis.

Mr. C. J. SYMONDS brought forward the patient shown at the last meeting (*vide* "Proceedings," vol. ii., p. 17): Some change had taken

place since the previous examination, but the condition was still characteristic of pachydermia in the opinion of the President, Dr. Kidd, Dr. McBride, and Dr. Ball.

Dr. BRONNER and Dr. SPICER advocated the removal of a small piece of the projecting tissue for microscopic examination.

The PRESIDENT thought that the diagnosis was sufficiently clear without the use of the microscope. Changes took place very rapidly in these cases, and the results of microscopic examination were not always positive, but sometimes brought confusion into a simple case.

Venous Angioma of Pharynx.

Dr. P. MCBRIDE showed a sketch taken from this case. The patient, a young married woman with tendency to varicose veins, noticed the tumour accidentally one day on looking into her throat. The angioma consisted of tolerably large veins, and occupied the whole palatal margin from the uvula, inclusive of the left side. Smaller separate patches were seen on the anterior and posterior pillars of the fauces, while a bluish tinge was communicated to the anterior portion of the soft palate of the corresponding side.

As the tumour produced no symptoms it was not intended to apply any treatment.

Ordinary Meeting, January 9th, 1895.

Moriform Growths springing from the Posterior Border of the Nasal Septum.

Dr. WILLIAM HILL showed this case. C. H., aged forty, presented himself at St. Mary's Hospital in July, 1894, suffering from slight catarrh of the Eustachian tube and tympanum; he had a congenital cleft in the hard and soft palate. On post-rhinoscopic examination two elongated moriform tumours were observed, about the size of broad beans, springing symmetrically from the posterior border of the septum. As these were not large enough to cause obstruction, it was decided to watch their growth. Since that date the right one of the two tumours had nearly doubled in size.

Growths in this situation must be comparatively rare, though the exhibitor of this case had removed two such tumours, springing from the *same site*, from a patient whose posterior nares were quite blocked by them; their removal by snare, scissors, and knife had proved by no means easy. As far as Dr. Hill was aware, the only recorded case was the one shown some time since at this Society by Dr. Dundas Grant, in which moriform tumours sprang from the same site.

Ulcerative Disease of the Left Nasal Fossa of Undoubted Tubercular Nature, followed by Lupoid Disease of the Left Ala.

Dr. WILLIAM HILL showed this case. E. H., aged thirty, sought advice in May, 1893, for a blocked and ulcerated condition of the left nasal fossa. There was no evidence of syphilis. The patient had been

dismissed from the army four years previously for tubercular disease of the lung with hæmorrhage, but there had been no active pulmonary disease for three years.

Granulations and exposed bone were found on the middle fossa in the region of the uncinate body. Dr. Semon saw the case in consultation, and whilst advocating the administration of iodide of potassium he concurred in the view that the disease was probably tubercular, and required energetic local treatment as well. The diagnosis was eventually confirmed by bacteriological examination. The granulations were frequently curetted, and applications of lactic acid, chromic acid, sulphuric acid of phenol, and trichloroacetic acid were tried, the last apparently with most benefit; a small sequestrum came away, and after this the ulceration was found to be practically healed at the end of two months, though the patient was recommended to continue to medicate the nose daily with an alkaline douche.

When seen again on December 15th, 1894, there was an abundant purulent discharge from the nostril and ulcers on the floor and on the outer wall of the middle meatus, together with excoriation and swelling of the upper lip near the anterior naris, and evidently extending by continuity from the vestibule; in spite of appropriate treatment the disease had extended to the ala, which at the present time presented a tuberculated appearance, and looked just like lupus. The patient had recently been under the care of Mr. Stanford Morton for purulent ophthalmia, probably caused by the irritating nasal discharge having been conveyed accidentally to the eye. The case was of interest, inasmuch as an undoubted tubercular disease of the nasal mucosa had been followed after nearly two years by extension to the cutaneous covering of the ala, and this more recent lesion would have been unhesitatingly diagnosed as ordinary lupus had not the course of the disease and the continuity of the lesion been known. Ichthyol ointment was now being applied locally, but it was proposed to scrape the affected skin.

Dr. EDDOWES thought that the disease was probably lupus. He suggested getting rid of infection by means of mercurial plasters and ointment, and then attacking the diseased surface by the cautery, using great care to keep the wound aseptic.

Dr. HILL still regarded the case as tubercular.

Dr. ALEXANDER HODGKINSON (Manchester) exhibited—

1. *A Throat Mirror* for laryngoscopic purposes in which quartz was substituted for the glass of the ordinary mirror. It was thus rendered far more durable.

2. *A Magnifying Laryngoscope*. This consisted of a magnifying throat mirror and an ordinary frontal reflector to which were adapted magnifying lenses. The throat mirror consisted of a plano-convex lens mounted in the usual way, and having the convex surface silvered so as to constitute a concave reflector when seen through the plane face. The magnifying power was varied by having two such mirrors with focal lengths of eight and eleven inches respectively. The frontal mirror, of

the ordinary size and form, was fitted with four double convex lenses, two for each eye, and capable of being used separately or together, so as to allow of further varying the amplifying power. The focal length of each of these lenses was twenty inches. When properly constructed for varying width of eyes it was easy to use, and gave excellent results.

Laryngeal Stenosis; Polypoid Growth from Left Vocal Cord, (?) Syphilitic.

This case was shown by Dr. PERCY KIDD.—William I., aged forty-four, polisher, admitted into the Brompton Hospital on December 15th, 1894, on account of dyspnœa.

Patient had syphilis sixteen years ago, followed by a rash, and was treated at the Middlesex Hospital for eighteen months. His tongue has been cracked and covered with whitish patches for thirteen or fourteen years. Hoarseness began three years ago, and he ultimately lost his voice. For the last four months he had suffered from gradually increasing dyspnœa with cough and slight expectoration, which he found much difficulty in expelling. Slight hæmoptysis (one teaspoonful) occurred a fortnight ago. He stated that he had lost much flesh.

On admission marked stridor and dyspnœa, mainly inspiratory. Nutrition of body poor. Chest slightly hyper-resonant; breath-sounds weak generally. Tongue showed leucoplakia and some scarring. Larynx moderately congested. Glottis represented by a mere chink bounded by two motionless fleshy bands, which showed a kind of fusiform swelling at their middle two thirds. Just below the posterior third of the left band a pale pink, irregularly rounded, polypoid outgrowth projected inwards, and almost touched the opposite side of the larynx. The posterior wall was marked with numerous coarse nodular elevations; no definite ulceration. Sputum examined for tubercle bacilli with negative result.

The case was regarded as one of laryngeal syphilis, and was treated with large doses of iodide and mercury.

The stridor and dyspnœa had diminished slightly, but there had been no change in the larynx beyond a slight decrease in the nodular appearance of the posterior wall.

The case resembled somewhat that of C. H., shown at the March meeting of the Society in 1894, which proved to be syphilitic.

Mr. W. G. SPENCER thought that thyrotomy should be performed, as the larynx was very narrow.

Dr. HALL considered that the disease was undoubtedly syphilitic, and that it would be best to perform tracheotomy, and to attack the larynx with the forceps at a later stage.

The PRESIDENT thought that the possibility of malignant disease should not be disregarded. There seemed to be an excessive outgrowth for a simply syphilitic condition, but anti-syphilitic treatment should be tried.

Dr. KIDD, in reply, stated that no attempts had yet been made to remove the growths with the forceps. He had, at first, thought that the disease was tubercular, but now regarded it as syphilitic. He proposed

to treat the case by tracheotomy, and subsequently to try removal of the outgrowths with the forceps.

Œdematous Swellings of the Palate and Pharynx.

Dr. EDWARD LAW showed a patient, Mrs. S. B., aged sixty-two, widow, first seen on November 20th, 1894, on account of the sudden occurrence of great difficulty in respiration and deglutition, associated with much discomfort and swelling at the back of the throat. The patient had been under the care of Dr. Alfred Eddowes for nine months suffering from so-called Quincke's disease or acute circumscribed œdema, a malady which had been also described as urticaria tuberosa, nodosa, or gigans.

During childhood she was said to have suffered from one attack of nettle-rash, and her father is reported to have been very gouty.

The patient had always enjoyed fairly good health with the exception of occasional dyspepsia. Three years ago she lost her husband, and suffered from severe and lasting shock, but it was not until eighteen months later that the disease began from which she now suffered. Before the rash appeared she took chillies for indigestion, but neither Dr. Eddowes nor the patient had been able to ascertain that the ingestion of any particular condiment or food had any influence in the causation of the eruption.

The patient was now practically never free from the disease. She described the lesions as coming on with little hard isolated lumps under the skin, which were about the size of a pea or bean and very irritable. The redness and œdema appeared later, and were apparently accompanied by a feeling of heat, tension, and smarting rather than of true itching. No factitious urticaria could be produced by scratching, although a little excessive congestion followed the irritation of the nail, but no distinct urticarial wheals had been observed in her case, either from the disease or from artificial excitement.

The appearance of a patch when the œdema was well established and the redness at its height was somewhat similar to erythema nodosum, but it differed from that affection in the history of the case and in many other respects.

The size and shape of the patches varied greatly, sometimes involving nearly the whole of a limb. They caused most distress when they affected the mouth, throat, or face. Occasionally the eyelids had been so swollen as to be completely closed for one or two days.

She had had previous attacks of a less urgent character in the throat and mouth, with and without swelling of the lips and tongue.

The patient gave the following history on the occasion when first seen by Dr. Law. She woke up suddenly in the early morning with the feeling of a lump at the back of the throat, which she was unable to dislodge by coughing or swallowing. There was great discomfort and uneasiness, but little or no pain. She noticed, by means of a looking-glass, that her throat was so much swollen that the uvula was in contact with the two sides of her mouth. The difficulty in swallowing greatly increased, and the sense of suffocation became so oppressive that the patient was very

nervous and alarmed through the fear of impending death. This critical condition lasted for two or three hours, when the symptoms gradually subsided and the swelling disappeared.

On examination a few hours later an œdematous swelling of the uvula was found, with a slight serous infiltration of the left half of the palate and of the left ary-epiglottic fold. The left ventricular band appeared to be more prominent and congested than the one on the opposite side. The neighbouring parts of the pharynx were only slightly hyperæmic, and a few enlarged follicles were visible upon the posterior pharyngeal wall. There was increased redness of the epiglottis and laryngeal mucous membrane, but the vocal cords moved freely, and, with the exception of streaky redness, were normal in appearance.

No active treatment was called for, as the urgent throat symptoms had evidently already passed away. Dr. Eddowes stated that the following internal and local remedies had been employed with only questionable advantage : arsenic, quinine, ichthyol, colchicum, iron, citrate and chlorate of potash, bromide of potassium, creolin, tincture of iodine, and solution of alum.

Brocq, Riehl, Unna, Crocker, Pringle, and others had reported similar cases in which the tongue or mucous surfaces of the eye, throat, or stomach were affected by the disease. Strübing had also probably described the same disease as an angio-neurotic œdema.

The PRESIDENT observed that these cases were excessively rare. He had been watching a case for some time, but had never been able to see it while the local swellings were visible. In that case the swellings came on without warning on the soft palate, and lasted for a few minutes or sometimes for an hour. The condition had been well described by Strübing as angio-neurotic œdema.

Dr. HALL suggested that ten or twenty per cent. solution of cocaine might afford temporary relief if applied to the swellings directly they appeared.

Mr. BUTLIN objected to the term "Quincke's disease" as being altogether unknown. These temporary œdematous swellings, when causing obstruction to the respiration, might very well be overcome by means of intubation.

Mr. ROPER mentioned a case in which œdematous swellings of the lips, tongue, soft palate, arms and back occurred to an old lady of seventy-five without any warning. The swellings were of short duration, and seemed to call for no treatment.

Dr. LAW, in reply, had not been able to find any reference to "Quincke's disease" as such in any text-book, but a case was reported in the "*Archiv für Laryngologie*."

Lupus of Pharynx and Larynx.

The PRESIDENT showed the little girl affected with lupus of the pharynx and larynx whom he had demonstrated at the April meeting, 1894 ("*Proceedings*," p. 103). The treatment then proposed, viz., curetting and application of lactic acid locally with the internal administration of cod-liver oil and arsenic, had been carried out methodically in such a way

that the local applications had been limited to the pharynx, and the larynx had not been treated at all locally. Nevertheless a very general improvement had taken place, also in the condition of the larynx. The patches of lupus from the gums, palate, and pharynx had entirely disappeared; the larynx was much less ulcerated, though still swollen, and the previously aphonic voice was now loud and strong. The case offered a fresh illustration of the fact that certain cases of lupus will get better or even temporarily well under almost any medication.

Dr. Hennig's Oil Studies of Laryngeal and Nasal Disease.

The PRESIDENT also demonstrated Dr. Arthur Hennig's (of Königsberg) admirable studies in oil for teaching purposes of normal and diseased conditions of the upper air-passages. These studies represented forty illustrations very considerably enlarged from nature. It was mentioned that the artist greatly wished that these paintings should be reproduced for teaching purposes, but that the great cost of such reproductions stood in the way, and that it would only be possible to take the matter into serious consideration if a large number of (at least three hundred) subscribers were found.

Dr. SCANES SPICER proposed a vote of thanks to Dr. Arthur Hennig for the trouble he had taken to bring the pictures to the notice of the Society, and expressed the opinion that they should be reproduced if possible for teaching purposes.

Mr. CRESSWELL BABER seconded the resolution, which was carried by acclamation.

At the invitation of the President several members offered criticisms on the drawings.

Mr. CRESSWELL BABER, whilst complimenting Dr. Hennig on some of his excellent paintings, thought that the representations of the nasal cavities as seen from the front were not satisfactory, owing to their not showing the parts in perspective. In the drawings made and published by him some years ago, this point was specially attended to, and therefore, in his opinion, they gave a true idea of what was actually seen. Dr. Hennig's drawings also did not show the neck of the middle turbinated body.

Dr. BALL did not think that the reproduction of some of the commoner affections would be worth while, especially as they were by no means typical.

Dr. HILL pointed out that in these pictures, as in many of the textbooks, the post-rhinoscopic image was represented in the ideal manner, but not as it was actually seen. The upper turbinal was, as a rule, quite invisible, while the position of the middle turbinal was quite inaccurate.

Dr. BRONNER observed that for teaching purposes a good set of typical conditions was required.

The PRESIDENT undertook to convey these criticisms to the artist. The method of reproduction proposed was chromo-lithography, but the cost as at present estimated was almost prohibitive. It was intended by the artist that the pictures should be made useful for teaching purposes by means of pieces of frosted glass, which could be laid over the pictures, and variations sketched upon the glass by means of coloured chalks.

Radical Cure of Obstinate Suppuration of the Antrum of Highmore, combined with Intra-Nasal and Intra-Antral Polypi.

Dr. SCANES SPICER showed F. H., lawyer's clerk, aged thirty. Sent by Dr. J. Q. Bown in autumn, 1890, for foetid suppuration in the right nasal cavity. On examination, polypi were seen in region of ostium maxillare, and were removed. Suppuration continued, and antral empyema was diagnosed, and confirmed by transillumination. On December 27th, 1890, the antrum was tapped through the socket of a tooth which had been previously removed, and a gold tube fitted to a plate by Mr. Boyd Wallis. Irrigation was practised, and there was temporarily much improvement. After some months the tube caused pain and irritation, and had to be several times altered, and finally removed altogether, and purulent nasal discharge became worse than ever. In May, 1892, patient desired to have something more done, and he was operated on in St. Mary's Hospital by a large opening made with chisel and mallet through the canine fossa into the antrum, and its cavity was well curetted, much thickened granulation tissue being removed. Subsequently drainage apparatus was used, lead spigots, vulcanite plugs, rubber drainage-tubes, and Ellis's tube. All these from time to time caused local pain, and the suppuration, though at first less, finally relapsed to its former condition. In April, 1893, the drainage of the antrum being still deficient, patient was advised to have a further operation, in which an attempt should be made to render drainage better. With this view the opening in the anterior wall was opened up and enlarged, the cavity again curetted, and a large naso-antral opening made from inferior meatus (well behind entrance of nasal duct) into antrum with a Krause's trocar, the index finger being introduced into antrum through anterior opening to act as a guard. The antrum was *flushed* out with boracic lotion, and was then tightly packed with creolin gauze, and especially so as to distend the bucco-antral opening. After forty-eight hours the gauze was removed, and from that time irrigation practised thrice daily. No drainage apparatus was used. The patient was directed to blow frequently from nose through antrum to mouth, and *vice versa*, so as to move on any secretions tending to loiter in antral recess, and also to force boracic lotion from mouth through antrum into nose. The result of this was that the discharge gradually subsided, and soon ceased entirely. The patient had now seen no pus for eighteen months, and at the present time the nasal cavity looked healthy, and he could blow air through the antrum from mouth to nose or *vice versa*.

Dr. Scanes Spicer also showed the *débris* which he had curetted from other cases of chronic maxillary empyema, and which were seen to consist of fungous granulation tissue, mucous polypi, cholesteatomatous cysts, and in one case a portion of necrosed ethmoid.

He advocated the adoption of the double opening into the antrum in chronic cases in which there was reason to suspect the above complications, in which drainage was defective, and in which drainage apparatus caused irritation, or in which there was marked intra-nasal disease, under which category all his cases heretofore had come, for none of them had yielded to the simple method of alveolar puncture and drainage-tube.

Mr. BUTLIN had had several such cases. He generally scraped the antrum, but called attention to the necessity for making the opening in the floor and not at the side of that cavity in order to ensure perfect drainage.

Dr. REES doubted whether such operations were necessary in every case. They caused considerable deformity, and many cases could be simply relieved by removal of a tooth. The large openings were often an annoyance to patients who were smokers.

Dr. DUNDAS GRANT had been able to cure a few cases without operation. He thought that the extent of the operation must depend upon the condition of the lining membrane of the antrum. He had obtained good results in patients who possessed a good set of front teeth by the use of Krause's trocar.

Dr. SPICER had not tried dry treatment in these cases. In the present case all simpler methods had already been tried and found unsuccessful.

"Recurrent" Tumour at the Back of the Tongue; Operation, June, 1889.

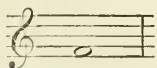
Mr. BUTLIN showed this patient, whose case is described in the "Clinical Transactions" for 1889.

The tumour stood up in front of the epiglottis; it was cut off with a galvano-cautery loop in June, 1889. Its structure was similar to that of the thyroid gland.

At present there was a prominent lump far back in the left half of the tongue.

Hoarseness confined to the Lower Register of the Voice.

Dr. DUNDAS GRANT showed a patient, Miss D., aged thirty, a school teacher, who had for about three years been the subject of hoarseness characterized by a "bleating" or "croaking" vibration accompanying her ordinary speaking voice and her singing in the lower part of its range. This entirely disappeared above the note



where, when she sang softly, the change of register occurred, and the tones became perfectly clear. On laryngoscopic examination the vocal cords were seen to approximate imperfectly in their posterior thirds during the utterance of the lower notes. (On subsequent more close observation the inner portions of the cords were seen to be thrown into loose visible vibrations.) During the emission of the higher notes the cords appeared to act normally. Dr. Grant attributed the condition to inactivity of a portion of the internal thyro-arytenoid muscle. The chest was normal, and the patient, though spare, was fairly muscular. He had recommended instruction in the use of the breath under Mrs. Emil Behnke.

The PRESIDENT pointed out that the condition was one of diplophonia. So long as all the elastic fibres in the cords were acting they might act unequally, and an imperfect tone was produced; but if only certain bundles of fibres were acting they might, within their own range, produce a clear tone as in Dr. Grant's case. He advised rest to the

voice, electric stimulation both inside and outside the larynx, and a course of strychnia.

Fixation of Right Cord.

Dr. WILLCOCKS showed a patient, R. M., a boatman, who had had a severe blow on the nose about thirteen weeks ago, and felt as if his backbone was broken in pieces. Eight weeks after he woke up one night complaining of his throat. On speaking he noticed his voice was hoarse. Since then he had got no better and no worse.

Present condition.—Right cord somewhat oblique and immovable. Right arytenoid cartilage prominent. No evidence of intra-thoracic tumour. No history of syphilis.

Dr. BRONNER and Mr. STEWART expressed the opinion that the case was one of perichondritis, causing mechanical interference with the movement of the cord.

Ordinary Meeting, February 13th, 1895.

A Case for Diagnosis, whether Tuberculous, Malignant, or Syphilitic.

The PRESIDENT asked the opinion of the members on the following case. J. F., aged fifty-five, a porter, came to the throat department of St. Thomas's Hospital on September 28th, 1894, complaining of hoarseness, which commenced fourteen days previously, a slight cough which came on after the hoarseness, with dryness, and a tickling sensation in the throat, causing frequent "hawking"; expectoration scanty; no blood; complains of drawing pain at left apex. Family history good. Past history good. No history of syphilis.

Examination.—*Fauces and pharynx* congested. Posterior pharyngeal wall granular, with distended veins and adherent secretion. *Larynx*: considerable congestion of larynx, and some swelling of ventricular bands.

November 9th.—Ventricular bands more swollen, some ulceration of both vocal cords. Was put on iodide of potassium, grs. v., three times a day.

December 21st.—More ulceration spreading to inter-arytenoid commissure. Patient says he feels as if he were going to be choked. Complains of pain on swallowing.

February 8th.—Voice slightly improved; has been taking pot. iodidi three months. Cough worse, and has pain in right side in region of hyoid bone on deglutition. *Larynx*: ventricular bands irregularly swollen; ulceration on posterior end on the right side. Vocal cords: posterior end of right side considerably thickened; left side similar, though in a less degree. Movements free both sides. Distinct superficial ulceration in the considerably tumefied inter-arytenoid fold. *Chest* at first normal, but on February 8th was in the following condition. Resonance slightly impaired, but equal. Breath-sounds, right apex, harsh, with a few *râles*; left apex, the *râles* more numerous; breath-sounds almost inaudible over rest of lung. No loss of flesh. No night

sweats. No hæmoptysis. *Sputum*: no tubercle bacilli found after repeated examination.

Mr. CRESSWELL BABER thought it was a case of syphilis, and inquired if large doses of iodide of potassium had been given.

Dr. DUNDAS GRANT thought it was a case of tubercle of the dry warty kind. Had seen a case of this sort, in which there were no physical chest signs during life, but *post-mortem* pulmonary tubercle had been discovered. He thought there was too much movement for epithelioma. Suggested curetting and lactic acid applications.

Dr. PERCY KIDD had seen two or three cases where the disease was situated in the angle formed by the vocal cords and arytenoids, which had proved to be tubercle.

Mr. CHARTERS SYMONDS had one in which the vocal cords were fringed with growths in a tuberculous case.

Dr. HILL asked if the use of tuberculin was justifiable in such a case for the purpose of diagnosis.

The PRESIDENT, in reply, stated that he had used large doses of iodide of potassium with no result. He had given up the use of tuberculin, but considered it quite justifiable for the purpose of diagnosis, and also the removal of a portion of the growth for microscopic investigation.

Pathological Specimen of Adenoid Growths, and one of Perforation of the Nasal Septum.

Dr. KANTHACK showed these specimens, and pointed out that the growths were not in the position usually depicted in books, but were situated on the walls of the naso-pharynx and around Luschka's tonsil.

The PRESIDENT in the name of the Society expressed their indebtedness to Dr. Kanthack for bringing before them such excellent pathological specimens.

Mr. CRESSWELL BABER and Dr. DUNDAS GRANT suggested that if Dr. Kanthack was able to obtain another specimen of adenoid growths, the anterior wall should be removed so as to give a view from the front.

Dr. BALL thought the perforation in the nasal septum was a case of simple perforating ulcer, as the voice was not affected.

Dr. DUNDAS GRANT suggested that frequent epistaxis was diagnostic of simple ulcer.

Dr. TILLEY quoted a case where a perforation occurred without local symptoms during an attack of typhoid fever.

Dr. LAW had a case of perforation caused by the removal of a cartilaginous spur by means of the galvano-cautery.

Mr. CRESSWELL BABER frequently removed cartilaginous spurs by the galvano-cautery, and had never seen a perforation follow; he always attacked the apex of the spur.

Dr. SCANES SPICER had never seen perforation follow the application of the galvano-cautery to the spur; he thought Dr. Kanthack's case was one of simple ulcer from the shape.

Case illustrating Various Morbid Conditions of the Nose and Ears.

Dr. E. LAW showed this case. A patient, aged twenty-six, came to the London Throat Hospital complaining of deafness. Had suffered from

ear and eye troubles during childhood, and had contracted syphilis four years ago. Examination showed general catarrhal conditions of the upper air-passages—deflected nasal septum—a papillomatous-looking growth from the anterior third of the left inferior turbinate bone, extensive polypoid proliferation of the left middle turbinate, enlarged Luschka's tonsil, sequelæ of otitis media superior (perforation cicatrices, etc.), hyperostosis of external auditory meatus, eczema of both auricles, and various affections of the eyes. Dr. LAW asked if the papillomatous-looking growth was a true papilloma, or a simple enlargement of the anterior extremity of the turbinate.

Dr. PEGLER considered this a case of papilloma.

Mr. STEWART and Mr. CRESSWELL BABER thought it was a simple hypertrophic condition.

Mr. SANTI, Dr. HILL and Dr. SCANES SPICER also thought it was not papillomatous.

Dr. LAW, in reply, stated that he would remove a portion and have it microscopically examined.

Laryngeal Stenosis, probably Lupus.

Case shown by Mr. PARKER. M. D., a girl, aged sixteen, first suffered from hoarseness and loss of voice a year and eight months ago, was treated by Dr. Macdonald at the Throat Hospital, Golden Square, and soon got quite well for the time, but has since then lost her voice off and on. Present attack followed influenza eight weeks ago, became steadily worse, causing complete aphonia and much dyspnoea until February 11th. The aphonia and dyspnoea were now very marked; there was loss of flesh and general debility.

Examination.—Distinct scars on the soft palate, and considerable loss of substance of the epiglottis were found; the ary-epiglottidean folds were much distorted, and covered by a number of small, pale, irregular nodules. The arytenoids, seen with great difficulty, were swollen and cedematous. Cords and ventricular bands could not be made out; base of tongue was covered with small nodules. On account of the scars on soft palate, was put on iodide of potassium; has been taking it for one month in gr. v. doses, but the condition of the parts has remained unaltered. Family history good. No suggestion of tuberculosis or syphilis, congenital or acquired. Lungs normal.

Mr. SANTI thought the case more like syphilis than lupus.

Mr. MILSOM REES considered it a case of lupus, and very like some cases he had seen treated with tuberculin.

Mr. PARKER, in reply, said he would try lactic acid applications.

The PRESIDENT suggested that arsenic should be given internally.

Anterior Nasal Stenosis from Cicatricial Contraction after Ulceration, with Consecutive Chronic Laryngitis.

Dr. SCANES SPICER showed a patient, Mrs. I. K., aged fifty-two, a monthly nurse, who contracted "blood-poisoning" two years ago while attending a case. She had suffered from glandular enlargements, rash, frontal headaches, and showed scars on arms and legs resembling those

left by rupial sores, and ulceration about anterior nares and vestibularium. These latter had healed, but had been followed by such narrowing as to give rise to subjective distress. Mouth-breathing and obstinate laryngitis with thickness of the posterior wall of the larynx. Suggestions were invited as to the treatment of the cicatricial stenosis, which did not appear to the exhibitor to be capable of material improvement.

Mr. STEWART referred to a case he had shown at a previous meeting, where the alæ of the nose were completely drawn in and the throat was secondarily affected; he had tried all sorts of forms of dilatation without success, but the patient was kept fairly comfortable by the use of menthol. He thought Dr. Spicer's case was one of syphilis, and did not think any operation would be successful.

Dr. MILSOM REES and Mr. SYMONDS thought Dr. Spicer's case was syphilitic, as she had nodes on the legs and arms.

The PRESIDENT suggested iodide of potassium and mercurial inunction; he thought an operation might be successful if the stenosis was incised, pyoktanin applied, and the wound stuffed with slips of iodoform gauze. He drew attention to the fact that in cases of syphilis of the upper air-passages it was peculiar that the disease attacked intensely one part and passed quite over another.

In reply, Dr. SCANES SPICER thought that the laryngitis presented no syphilitic characters, but was of that form seen in simple catarrhal conditions.

Paralysis of the Left Vocal Cord.

This was shown by Mr. CHARTERS SYMONDS. J. C., aged forty, a butcher sent to Guy's Hospital by Dr. Dodwell, complaining of alteration in his voice. Up to October, 1894, resided in California; at the commencement of that month, while still there, he "caught a cold" and had a severe "chill," but does not seem to have had any cough or even nasal catarrh. Woke up one morning with altered voice as it is now. Had no previous hoarseness. No joint pains, though says he has had rheumatism. No history of injury or debauch.

Family history excellent. Married with healthy family. Declares he never had a day's illness in his life, and now feels perfectly well. He is a strong-looking, healthy man. Voice exactly the same as when first noticed to be different from the normal. No dysphagia, but he cannot drink large gulps of anything—all his fluid he is obliged to sip. Eyesight good, pupil reflexes normal; knee-jerks normal. Can stand perfectly with eyes shut. Chest normal. No dulness. No dyspnoea. When first seen, on January 25th, mucous membrane of larynx healthy. No swelling anywhere. The left cord fixed and movable, quite on the middle line. The cord itself appeared quite healthy. The right moved well, and was in all respects normal. The voice is somewhat gruff, but is loud and fairly strong. There is no evidence of perichondritis nor of intra-thoracic disease.

The case seems to be one of paralysis of the cord without a discoverable cause. May it be an early stage of some central disease?

Dr. MILSOM REES thought the case was one of simple rheumatic paralysis from cold.

Dr. SCANES SPICER considered the paralysis due to intra-thoracic trouble, as there was no abnormality in the larynx.

Mr. SYMONDS, in reply, stated that he had not examined the chest himself, but would do so. It had been examined by his clinical assistant and pronounced normal.

Paralysis of Left Vocal Cord after Injury.

This case was shown by Mr. SYMONDS. L. H., aged fifty-six, came to Guy's Hospital, January 11th, 1895. One week before was looking after a steam elevator, which was above him. As he was speaking to someone below it came down, crushing him severely about the upper part of the chest. Does not think his neck was hurt. Immediately on recovering he found his voice had disappeared. No hæmorrhage. No pain. No dysphagia. No history of syphilis, phthisis, or rheumatism.

Examination.—Left cord red and fixed on phonation, not quite in middle line, nearer adduction than abduction. The arytenoid did not move at all. Nothing found in chest to account for symptoms. No sign of external injury. Right cord normal. On January 25th the left cord has approached the middle line and occupied a mid-position; is immovable. Some dysphagia the last ten days.

February 8th.—Larynx remains the same. A full-sized bougie passed is caught at the cricoid, evidently from muscular spasm. The man speaks in a whisper, but can copy a low laryngeal note; the aphonia is presumed to be nervous. No sign of aneurism or malignant disease.

Mr. SYMONDS was disposed to think that the paralysis may have existed before the injury.

The PRESIDENT said it was difficult to say if it was caused by the injury, but as the position of the cord had altered at different times he would say yes. He considered the aphonia to be neurotic.

Pachydermia Laryngis.

Mr. SYMONDS again showed the case of Mr. H. The swelling on the left cord was still present. It has gradually diminished in size; the nodular character has nearly all disappeared. At the present time the swelling is more marked posteriorly, where it is abrupt and elevated, while in front it is flatter and smoother. The cord itself is fairly normal, and the opposite side is free. The cord moves freely. The voice is strong and clear for the most part, but at times is gruff. The patient at first took iodide of potassium, but has for some weeks taken mercury. No local treatment beyond rest has been employed.

Drawings illustrating the various stages, which had been made by Dr. Waggett, were shown.

Dr. WARNER said this case had more or less redness of the throat for some time, but this had increased considerably two days ago. Some years ago he suffered from granular pharyngitis.

Dr. WAGGETT suggested absolute silence as treatment, and mentioned a case he had seen in conjunction with the President which under this treatment had greatly improved; Leiter's tubes and iodide of potassium had also been used. He thought in Mr. Symonds' case the vocal cords had become much redder, and over an increased area.

Pachydermia Laryngis.

This case was shown by Dr. Tilley. Mrs. S., aged fifty-two, came to the London Throat Hospital complaining of a feeling of suffocation in the throat, more especially at night, occasional darting pain in left ear, and hoarseness. Complaint came on twenty years ago, six months before a confinement, and some sixteen years after coming to England—was born in Germany. Has been twice married; first husband died of cancer, second husband had suffered for five years from ulcers on the legs. Has drunk beer freely since childhood, and latterly has taken in addition a half quartern of rum when the suffocating feelings come on, which is pretty frequently. Had tonsils removed at Middlesex Hospital two years ago. At London Throat Hospital some varicose veins at the base of the tongue were burnt, and gave great relief for two or three months.

Examination.—Vocal cord congested and thickened; outward movements limited. Shreds of dry adherent mucus in various parts of larynx. In inter-arytenoid fold is a large and well-marked swelling of somewhat triangular outline; traversing this mass in a direction from above downwards is a fissure. The points of interest are the rarity of the affection in women; the important etiological factor of alcohol; the position of the disease in the inter-arytenoid fold; the fissure through the growth, which probably accounted for the pain; and the slight immobility of the vocal cords, probably due to chronic inflammation.

Dr. WAGGETT had seen the case at the London Throat Hospital, had painted it regularly with perchloride of iron, and the voice was quite recovered for three weeks.

The PRESIDENT said these cases were extremely rare here, but very common in Vienna, and in answer to Dr. Law attributed this frequency to beer-drinking.

Mr. HILL supposed that attrition must be present in pachydermia.

Ordinary Meeting, March 13th, 1895.

Discussion on the Diagnosis and Treatment of Empyema of the Antrum of Highmore.

The PRESIDENT in the name of the Society offered a cordial welcome to the members of the Odontological Society present, and stated that, although the diagnosis and treatment of empyema of the antrum had of late years been frequently discussed, yet at a recent meeting of the Laryngological Society such a difference of experience with regard to the results of treatment and to the methods employed had become apparent, that the Council of the Society had considered it desirable to choose this subject for general discussion. What was required was not any academic discussion of the whole subject of empyema of the maxillary sinus, but brief and practical statements as to the methods employed by various observers, and as to the final results they had obtained, together with such points of diagnostic importance as they

had found of particular value. He invited remarks to be made in this spirit.

Dr. ADOLPH BRONNER thought that one ought to distinguish between the mild and severe cases. The former were mostly due to nasal disease, and could be cured by treatment through the middle or inferior meatus, as suggested by Mikulicz. If syringing with boric acid did not effect a cure, the insufflation of powder was to be recommended. At first boric acid and iodoform should be used, and then the iodoform should be discontinued and aristol be used. Iodoform often caused abnormal growth of granulation tissue. If a diseased tooth were found, this should be removed, and the antrum opened through the alveolus. The patient could syringe or blow in powder through a small Eustachian catheter. In cases where there was a polypus or much granulation tissue the canine fossa should be opened and the finger introduced, and if necessary the antrum scraped with a sharp spoon. It was not always necessary to introduce through and keep a tube in the alveolar process when this was opened. In answer to the President, he stated that 40 per cent. of his cases were cured, the length of time taken being under five or six months. In answer to Dr. Spicer, he stated that the deformities caused by a large opening in the canine fossa were a falling in of the face, which thus did not present a symmetrical appearance, and the growth in a wrong direction of the teeth.

Dr. GREVILLE MACDONALD maintained that it was the custom to trust for diagnosis too implicitly on the replacement of pus in the middle meatus on bending forward the head. He had seen at least a dozen cases, some of them associated with antrum disease, others not, where suppuration in the frontal sinus produced the same phenomenon. He likened the condition of the latter case to a narrow-necked bottle, which, held in an inverted position, would not allow its contents to escape without occasionally being placed on its side to allow the air to enter. As far as treatment was concerned, and his remarks did not refer to cases with coexistent nose disease, he believed that the exploratory opening through the alveolar border, and drainage with the smallest size drainage-tube, were sufficient for the cure of recent cases, *i.e.* of not more than six months' duration. In those of longer existence he had occasionally found it necessary to make the large opening for the insertion of the finger, and after scraping away granulations, etc., he had always secured a cure. But in speaking of cure he would have it understood that he did not mean more than the cessation of suppuration, believing that chronic catarrh frequently remained in spite of all endeavours; and he maintained that such a catarrh would often make it desirable that some form of drainage should be permanently secured.

A letter was read from Mr. CRESSWELL BABER, who stated that in his opinion transillumination was a valuable aid in the diagnosis of empyema of the antrum. He attached special importance to the illumination of the outer half of the infra-orbital region, this being the part least accessible to rays transmitted through the nose and not through the antral cavity. Certainty of diagnosis could only be arrived at by flushing out the antrum through the socket of a tooth or other opening, or

aspirating through the inferior nasal meatus after the method of Moritz Schmidt. With regard to treatment, he always tried the alveolar method, first allowing the patient to syringe out himself with an antiseptic solution through a metallic Eustachian catheter attached to a Higginson's syringe; and only when this method failed to arrest discharge did he resort to a larger opening in the same position or through the canine fossa for the purpose of exploration, and if necessary scraping and packing the cavity.

Dr. WILLIAM HILL read part of a letter from his colleague, Mr. Ernest Lane, who had been associated with him in the treatment of several cases of antral disease at St. Mary's Hospital, and who was unavoidably prevented from taking part in the discussion. Mr. Lane wrote: "From the experience gained, and on reviewing our cases, I am led to the conclusion that the most appropriate and rational method of treatment is that of opening the antrum *above* the alveolar process through the canine fossa, and thoroughly clearing out the cavity with Volckmann's spoon or other appropriate instrument. Bearing in mind the fact that in the majority of our cases—six out of seven—the walls of the maxillary antrum were covered with either soft and polypoid granulations or with genuine polypi, in addition to caseous *débris*, it seems to me to be an essential point in the treatment that the antrum should be thoroughly inspected, digitally explored, and radically treated by an adequate opening at a dependent part of the cavity, through which efficient drainage can afterwards be carried out." Dr. Hill, whilst endorsing Mr. Lane's remarks, explained that in the cases referred to the ordinary method of drainage and syringing, by a hole drilled through the socket of a tooth, had been first carried out for many months, and in one case for two years, with most unsatisfactory results. He felt certain that the morbid contents of the antral cavities in these cases could *never* have been cured by the application of any lotions or powders at present in surgical use. It was as futile to expect such a result in the case of antral polypi and granulomata as in the case of similar disease in the nose and ear. Instrumental removal was the only rational treatment. If a case with obvious antral disease associated with nasal polypi, granulations about the uncinate body, came under his care, and was unrelieved after two months' treatment by the ordinary alveolar method, he would have no hesitation in recommending the thorough exploration of the antrum through a large opening in the canine fossa. He believed an additional opening in the nasal cavity, as recommended by Dr. Spicer, was often useful, especially when the *ostium maxillare* was blocked by an hypertrophied granular condition of the uncinate process. The radical operation he advocated was devoid of danger; he had never seen any deformity result. The œdema and pain in the cheek occasionally observed rarely lasted more than a week or two; certainly in one patient, an early case, the nasal duct had been slightly injured, either by a too vigorous curetting of the nasal wall of the antrum, or else from the counter opening into the nose having been made too far forward.

In answer to a question from the President as to the proportion of cases in which the canine fossa operation had been resorted to, Dr. Hill admitted that his experience had not been large, but that the seven cases

operated on radically had been very marked ones, and due to nasal disease ; in three others he had been content with the alveolar method, but inasmuch as they had not long remained under observation he could only say they were relieved. Perhaps it was accidental that he had seen so large a proportion of cases in which the antrum was choked by growths, and which therefore could only be treated by a large opening ; but it might be that he had failed to attach much importance, and even failed to diagnose the milder cases which had been described by members of the Society as yielding so readily to applications syringed into the cavity through a small hole.

Mr. WALSHAM said he considered that in empyema of the antrum, as elsewhere, the only absolute sign was the actual detection of pus on exploration. He, however, held that transillumination was of much value, and had practised it as a matter of routine in all cases in which pus in the antrum was suspected. In some cases in which pus had been detected, there had been merely a shadow below the eyelid of the affected side, the rest of the face lighting up. In two or three instances of what turned out subsequently to be empyema of the antrum no pus could be discovered in the nose, the only symptom calling attention to the affection having been intermittent fœtor, and this in one instance was only evident to the patient himself. A marked dulness to percussion on the affected side has been observed in a few cases. He had practised exploration through the inferior meatus, an empty alveolus, and the canine fossa. The first method he considered a useful one in nervous patients, since the puncture could be made under cocaine. As he was accustomed, however, to drain either through an alveolus or canine fossa, he preferred as a rule to puncture at one of these situations under gas, as the one operation then sufficed. Of the last two methods, he only punctured through an alveolus when a tooth was absent or carious. He would on no account remove a sound tooth for the purpose. He generally succeeded by merely washing out, leaving the small spiral tube *in situ* during the intervals. In exceptional cases he had had to make a larger opening through the canine fossa, introduce his finger, and scrape out the cavity. In answer to Dr. Hill, he said the material removed was granulation-like matter. He had not had to remove anything like true polypi from the cavity. He had met with an instance in his own practice where the large opening thus made had not closed, but remained as a discharging sinus, and he had seen another case in which such an opening had been made by a distinguished rhinologist several years previously, which had also remained open and continued to discharge. He wished to know the experience of others on the subject. He had not found patients had been troubled, where the spiral tube had been used either in an alveolus or in the canine fossa, by food passing into the antrum. Dr. Hill said that so far from having to complain of the hole in the canine fossa remaining patent, the difficulty in his experience had been to prevent it healing too soon. Dr. Greville Macdonald, on the other hand, stated that in his experience the wound never healed.

Dr. DUNDAS GRANT agreed with Dr. Greville Macdonald that the presence of muco-pus in the middle meatus was in itself quite insufficient

evidence on which to found a diagnosis of empyema of the antrum. He considered transillumination of the greatest value ; by its means we could sometimes eliminate antrum empyema absolutely from the presence of translucency, and thus prevent unnecessary operative interference. Opacity was not of equally positive significance. He relied chiefly on the exploratory puncture and irrigation of the antrum by the introduction of Lichtwitz's fine trocar and canula through the outer wall of the inferior meatus. The revelation of pus by this method was very convincing to the patient, the temporary comfort obtained inducing greater readiness to undergo further remedial treatment. He had not found irrigation through the natural orifice, as Garel had described, at all easy, even when he employed a canula of Garel's own pattern. He thought it of great importance to diagnose the cause if possible. He attributed the disease to nasal causes in the absence of the characteristic dental fœtor, and of obvious dental disease, especially if the affection appeared to originate in a well-marked coryza, or there were some other intranasal cause, such as a frontal sinusitis. (He had a case of frontal sinus suppuration without at first any antral disease. The nasal suppuration persisted in spite of the apparent cure of the frontal condition. On re-investigating the antrum a secondary suppuration of that cavity was detected, which yielded readily to intra-nasal treatment by means of Krause's trocar.) In presence of a diseased tooth in the appropriate position, or with a history of dental pain preceding the nasal discharge, he would ascribe the antral empyema to dental disease. His cases had, as a rule, been treated by the alveolar method, but some by means of a small perforation in the canine fossa. Those cases seemed to have done best in which a tube was carefully fitted by the dentist, and in which peroxide of hydrogen was the antiseptic employed. He thought it possible the alveolar puncture was too exclusively employed, for although the opening was in the lowest position it was not used for drainage, but as an orifice of entrance for the irrigating fluid. It was a possible source of infection of the antrum by some of the numerous bacteria inhabiting the mouth ; and in those cases in which pus did not appear at the time of the puncture, but later on, he thought that in some instances at least this process of infection would account for it. Alveolar puncture was not always easy, as the antrum was sometimes very small and situated far inwards, while the alveolar process extended far outwards. Under such circumstances it was easily possible to miss the antrum, and he had seen even in the hands of an experienced operator the puncture so made that the fluid used for irrigation was extravasated into the tissues over the antrum, causing a large painful swelling of the cheek. The great facility with which the patient could practise irrigation for himself was the crowning advantage of the alveolar operation. He had, however, seen several cases in which, after long-continued alveolar irrigation, a degree of improvement was obtained which remained stationary. Rapid advance took place when there was superadded the method of treatment by means of Krause's trocar, and still more as soon as the alveolar opening was got to close. Dr. Grant had by latter method of treatment effected cures in two cases in a few weeks. The irrigations

were practised thrice, then only twice a week. After each irrigation, air was blown in to dry out the cavity, and eucrophen or iodoform insufflated. He recommended the adoption of this method in cases in which (1) there was no evidence of dental origin or the presence of diseased teeth, (2) when the patient could easily attend for irrigation by skilled hands, or (3) in which the alveolar opening had been maintained for a long time and the disease had reached a stationary stage, before resorting to the more extensive operation through the outer wall of the antrum. In cases where alveolar puncture was badly borne or unsatisfactory the nasal operation was certainly advisable.

Dr. SCANES SPICER said that transillumination was in many cases of decided value and clinched the diagnosis. Relative opacity of one side combined with positive rhinoscopic and symptomatic evidence afforded the strongest presumption of antral empyema, and justified exploratory puncture. Taken alone, however, transillumination was not conclusive, since the bones may not be bilaterally symmetrical in thickness, or the antra in size, shape, and partitioning—circumstances which must affect the transmission of light through the face. He attributed more value to the comparison of the areas below the lower lids than to the lighting up or not of the pupils, which latter phenomenon appeared to be much less common normally than the former. On the other hand, bilaterally symmetrical opacity of cheek tissues and non-illumination of pupils do not indicate double antral empyema, nor do they exclude empyema of one or both cavities. In a large number of healthy subjects such opacity is found. With reference to the subjective perception of light on transillumination, a dull red glow may be felt on the healthy side to contrast strongly with the absence of such on the side of the empyema. This observation was made for the first time, it is believed, by a former colleague when the latter was transilluminated four years ago for antral empyema. He had not had a single cure on treating *chronic* antral empyema by the usual openings through the alveolar ridge. He had, with the co-operation of skilled dentists, for some time made these openings, and had adapted to them gold tubes fitted to artificial palates, or to small plates attached to adjacent teeth. Such tubes (and plates), in his experience, always caused, sooner or later, irritation, pain, and perpetuated suppuration. The cases went on washing out for many months or years, and were not followed by cure. He had treated all his earlier cases in this way. It is true they were chronic cases, and had well-marked intra-nasal disease, polypi, granulations, necrosis, or foetid purulent rhinorrhœa. He had therefore been led to look about for some method of shortening the period of treatment, and that of Dr. Robertson appeared to meet some of the indications, in removing the membrane secreting the pus and in providing freer drainage, but it had the disadvantage of requiring a mechanical drain. He had therefore conceived the idea of adding to the canine fossa opening a large one from the inferior nasal meatus, well behind nasal duct, opening into the antrum with a Krause's trocar and canula, so that the patient could keep the antrum clear, after curettement, by blowing air from nose through antrum to mouth, and *vice versa*, constantly, and also washing antrum out fre-

quently by forcing antiseptic washes through from mouth. This addition largely diminishes the tendency of the bucco-antral opening to close, though should it do so the passage is easily restored after cocainization by incision and dilating forceps, and renders abolition of drainage apparatus practicable. After curettement suppuration diminishes *pari passu* with contraction of bucco-antral opening, and often entirely ceases, leaving a small permanent potential bucco-antral nasal fistula which gives rise to no symptoms, and is rather to be treasured as an emergency exit for antral secretions, or safety-valve through which the antrum can be blown out. The objections which had been raised against this operation were its severity, that deformity was caused, that chronic toothache followed, and that smokers could not draw their pipes properly. As to the severity, the temperature frequently never rose at all, and patients need not usually be confined to their room more than a few days. In all the cases in which he had operated by this method (now about twenty) he had never on any occasion found any approach to either of the other objections which had been raised, and he could only regard them as theoretical as applied to the operation he had described. The real objections to the operation lay in the time and patience requisite to effect it thoroughly and without injury to nasal duct, infra-orbital nerve, or dental nerves, and the impossibility of guaranteeing in every case that the bucco-antral opening would not require incision and dilation owing to growing over of soft parts too soon. These appeared to him small inconveniences compared with the positive advantages of measuring the period of cure of antral empyema by weeks instead of by months or years, which was what he claimed for it.

Dr. BALL considered the important practical point was whether any very radical treatment should be employed at the outset, or whether this should be deferred until simple means had failed. His own opinion was that simple means should be tried first. An opening should be made in the alveolar border whenever this was possible, otherwise in the canine fossa, and irrigation of the cavity should be practised in the usual manner. He had followed this plan in sixteen cases. In all these cases the opening was made in the alveolar process. Of these sixteen cases, six had got well after a varying number of months, and had remained well after removal of the tube and closure of the orifice. Of the remaining ten cases, three were abroad, and one had been lost sight of, and he could not say what their condition was. Three declined any further interference, as they were satisfied to keep themselves comfortable by washing out the antrum daily. In three cases he had enlarged the alveolar opening sufficiently to pack the cavity with iodoform gauze, and had kept it packed for a week or two, changing the gauze daily, until the opening had contracted so much that it was no longer easy to pack the cavity. After that the cavity was washed out daily. Two of these cases got well, the third was not in any way benefited. He therefore quite agreed that there would always be a residuum of cases which would require very radical treatment, and probably in these cases Dr. Spicer's method would prove the most effectual.

Mr. WALTER SPENCER mentioned three cases of pus in the antrum

which differed widely from those upon which the discussion had taken place, since the pus was formed in connection with acute necrosis of the jaw. In one case he removed the alveolar process of the superior maxilla, which had become necrosed, thus taking away the floor of the antrum. The case was shown some time ago at the Clinical Society, when the whole dome of the antrum could be easily seen. Another case had been previously treated by an incision through the cheek, and several attempts had been made to remove portions of the maxilla. When first seen by Mr. Spencer, a most ugly puckering of the cheek had been produced without any relief to the suppuration. A wide alveolar opening was made, and the case soon got well. A third case seen *post-mortem* had died of septicæmia from acute necrosis of the maxilla, and pus was found in the antrum and in the spheno-maxillary fossa. All three cases were considered to be syphilitic in origin.

The PRESIDENT observed that the discussion had clearly shown how widely the experiences and opinions of various members differed in this question, and how impossible it was as yet to draw from it any general lessons. He must range himself decidedly by the side of Dr. Ball in believing that the more heroic measures ought only to be adopted after the failure of the milder means. He may perhaps have been fortunate in his own results, but, having treated in conjunction with Mr. England between twenty and twenty-five cases in private practice during the last few years, in the overwhelming majority of cases the alveolar method, with subsequent insertion of a golden tube and washing out the antrum through that tube by means of a Christopher Heath's apparatus, had answered admirably. He wished, however, to lay particular stress upon the necessity of giving most minute directions to the patients as to the after-treatment which they had to carry out themselves. One always was between the Scylla and Charybdis of their doing either too little, and thereby allowing pus to decompose in the antrum itself, or of their overdoing the washing out, and thereby never allowing the mucous membrane to come to a condition of rest. The rules which he adopted were as follows:—The operation having been performed, and the tube having been inserted, he saw the patients once again after the operation. On that occasion he prescribed for them a weak solution of some astringent, usually sulphate of zinc, not stronger than ten grains to the ounce, of which solution one teaspoonful was to be added to a tumblerful of tepid water for each injection. The patient was to sit before a mirror, so as to be able to see the fluid come out from his nose. As soon as the patient observed that the fluid returned clean from the nostril, *i.e.*, neither being turbid nor having flecks of pus mixed with the water, he was to stop injecting immediately. This proceeding was to be adopted at first twice daily; later on, as soon as the pus diminished, once daily. When, after the lapse of twenty-four hours, hardly any pus was evacuated on syringing, the washing out was only to be performed on alternate days; on further diminution occurring, every third day, and so on, until finally a week's interval was reached. When, after the lapse of a full week, on ejection no pus was evacuated, the patient was directed to make an appointment with him (the speaker) a week afterwards, and

meanwhile to leave the part quite alone. On the occasion of the interview he (the speaker himself) washed the antrum out, and if then no pus came out, the time had come for removing the tube. In this manner he had not merely succeeded in curing the great majority of his patients, although amongst them cases had been in which the disease had in all probability existed for a great many years, but he had been able to convince himself of the actual fact that the cure had been obtained, and he therefore warmly recommended this method. Should it fail, as no doubt occasionally it must if there were either necrosed bone or formation of granulations or polypi, etc., in the antrum, more energetic measures were of course indicated. But he regretted to say that in the few cases in which he had been compelled to resort to a broad opening through the canine fossa, with scraping out of the cavity and subsequent packing with dry iodoform gauze, etc., his results had not been very satisfactory.

Mr. ENGLAND showed the tube he always made for these cases fitted to a cast of the mouth. It consisted of a plain straight gold tube, attached to a plate which fitted to the alveolus and round the teeth on either side. The mouth of the tube was closed with a split plug, which could be removed easily by the patient.

Erratum.—Dr. PEGLER desires to correct an error appearing under his name in the last report of "Proceedings," with reference to Dr. Law's case of nasal obstruction. He intended to imply at the time that he disapproved of the term papilloma as applied to anterior hypertrophies of the inferior turbinal, since after making a number of microscopical sections of such growths he had never succeeded in tracing any analogy between that structure and that of a true papilloma.

NOTE.

HANDBOOK OF LARYNGOLOGY AND RHINOLOGY.

IN the list of names of the authors collaborating with Dr. Heymann in the production of this work should have been included that of Dr. FELIX SEMON (London).

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**EXFOLIATION OF THE COCHLEA, VESTIBULE, AND
SEMICIRCULAR CANALS.¹**

(Presentation of the Patient and Specimen.)

By M. A. GOLDSTEIN, M.D. (St. Louis, U.S.A.).

In the history of otology, reports of cases of exfoliation of the labyrinthine structure have always created more than a passing interest on account of the rarity of their occurrence, the importance of their recognition, and the value of the many clinical phenomena observed in the course of so extensive a necrotic process in the delicate structure of the temporal bone.

Caries and exfoliation of the cochlea alone, as a sequestrum separate from the rest of the labyrinth, has been observed and described with comparative frequency. From the interesting bibliography on the subject may be mentioned a comprehensive report by Bezold, of Munich; in a monograph published in 1866 are collected, perhaps, the richest statistics of necrosis of the labyrinth coming under the notice of an individual observer. In the clinical observations in a series of forty-six cases he summarizes the principal factors bearing on the subject as follows:—

Necrosis of the labyrinth occurs in the male with twice the frequency that it does in the female; children under ten years of age are especially predisposed to this affection (eighteen cases in forty-three); the acute exanthemata, especially scarlet fever, play an important rôle as causative factors in the long-continued suppurative otitis, with its frequent tendency to involvement of the internal ear; the necrosis usually follows in the wake of a suppurative otitis of long standing; in two cases only necrosis

¹ Read before the St. Louis Medical Society, Saturday, January 5th, 1895.

occurred after an otitis of eight months' duration; in twenty-one cases the otitis was of four years' standing; in eight cases, of twenty years; only one case is cited where the necrosis of the labyrinth is described as the primary and the otitis as the secondary process; the exfoliation and elimination of the sequestra occurred in thirty-seven of forty-six cases cited during the course of the disease; in nine cases death ensued before the elimination of the sequesterum. Larger sequestra, composed of not only the cochlea but also the vestibule, semicircular canals, and pars acustica interna, have been met with but rarely. Such cases have been cited and described in detail by Wilde (*Treatise on Diseases of the Ear*, 1854, p. 358); Shaw (*Transactions of the Pathological Society, London*, Vol. VII.); Toynbee (*"Arch. f. Ohrenh.,"* 1864, Bd. 1); Agnew (*"Amer. Med. Times,"* Vol. VI., p. 185—*see* Troeltsch, 1869, Second Am. Ed.); Voltolini (*"Monatsschr. f. Ohrenh.,"* 1870, No. 6); Pomeroy (*Transact. Amer. Otol. Soc.,* 1872); Blake (*Transact. Amer. Otol. Soc.,* 1880, Vol. II. p. 417); Pollak (*"Archives of Otology,"* 1881, Vol. X., p. 361); Sexton (*"Illustr. Quar. of Med. and Surg.,"* N. Y., January, 1882). In the two cases cited by Toynbee the sequestra were not removed until after death. In the other cases, with the exception of those of Pomeroy and Pollak, the large sequestra were removed through the external auditory meatus. In the case reported by Pomeroy the large sequesterum was exfoliated by a natural process of elimination from the opening of a sinus behind the auricle. In Pollak's case the necrotic process had advanced to such a degree that the sequesterum, the major portion of the temporal bone, was lifted out of position and removed with scarcely the application of an instrument other than the fingers. Each of the cases recorded was attended by a very marked facial paralysis, great disturbance of gait and equilibrium, and complete deafness on the affected side.

The case herewith described, with the presentation of the patient and specimen, may, perhaps, in consideration of the size of the sequestra, the beauty and thorough preservation of the pathological specimen, and the numerous clinical phenomena recorded, deserve recognition among the rarest cases of necrosis of the labyrinth as yet reported.

Holley Muse, coloured, male, aged six and a half years, born in Nashville (Tenn.). He was one of four healthy children; has always been well nourished, and of average strength and activity. At the age of three years (December, 1891) the patient contracted measles, making a smooth recovery without any of the frequent aural complications. One year later (November, 1892) an intense, acute ear-ache of several days' duration ensued, followed by a copious purulent discharge. For eighteen months the discharge continued freely, uninterruptedly, without the accompaniment of any unfavourable symptom, the patient not even experiencing the slightest pain or difficulty in hearing. May 1st, 1894, applied at the ear clinic of the Missouri Medical College Dispensary, where he received his first regular treatment for six weeks. During the following month the patient absented himself from the clinic.

July 17th: Patient was admitted to the ear department of the Missouri Medical Polyclinic. His general condition and the suppurative process had now assumed a decidedly unfavourable aspect. The discharge had

stopped, due to a plugging of the entire external auditory meatus with a cheesy mass, which, on examination, proved to be composed of partially dried and inspissated pus, epithelial shreds and detritus, emitting a thoroughly foetid and offensive odour. The entire posterior auricular region was very sensitive to slightest pressure, the auricle was assuming a position at right angles to the side of the head; the surface of the skin presented a sodden and irregular appearance; there was considerable induration



FIG. 1.—Photograph of patient, illustrating the existing facial paralysis on affected side. Prior to operation the patient had complete motor paralysis of right eye. The photograph, taken one month after operation, indicates considerable amelioration of the described condition.

with distinct points of fluctuation, especially above a circumscribed area in a line with the upper margin of the auricle. This was incised and drained of about one and a half ounces of green, foetid pus. A marked and almost complete facial paralysis was demonstrable on the affected side. A small sinus, from which a spicula of bone had been recently discharged, was present, situated one-half inch posterior to the insertion-line of the auricle and in a line with the posterior border of the lobule,

Such was the condition existing when I took charge of the case, August 3rd.

August 5th : The patient was prepared for operation. In the presence of Drs. Lippmann, Wolfner, Muetze, Neville, Kenner, and Carroll, I made a long, free incision, connecting the upper, postero-auricular abscess-opening with the orifice of the sinus described. Hæmorrhage and oozing was profuse and difficult to control, owing to the disorganized condition which the tissue in the field of operation had assumed through the long continuation of a severe necrotic process. A firm pressure by broad retractors was applied, and a free opening to the bone made. Placing my curette in position, preparatory to the removal of the necrotic bone mass, I found a serious state of things existing. The entire area was one rotten mass, and could have been more easily ladled out with a spoon than removed with a curette. After considerable manipulation with curette, forceps and irrigator, I succeeded in exposing to view a sinus, leading downward and forward, with a depth of nearly two inches, and diameters varying from one-half to one inch. The parts were thoroughly irrigated with hydrarg. bichlor. 1-1000, which was in itself a difficult task, under the circumstances, as a communication had been established through free exposure of the Eustachian tube between the ear and the naso-pharynx, and there was considerable danger of asphyxia and accidental complications while the patient was under chloroform. The wound was well dusted with iodoform, packed with bichloride gauze, and a well-padded compression applied. One hour later the little patient was up and *walking part of the way home.*

The following day I removed the first dressing. The discharge was profuse and the odour excessively fœtid. The irrigation with warm 1-1000 bichloride was applied with a twelve-ounce, hard-rubber, long-tipped syringe. The patient swallowed a considerable portion of the cleansing fluid. The communication between the large posterior opening and the auditory canal was free and drainage clear. The cleansing and dressing of the wound caused the patient no discomfort, beyond that of the fluid entering the naso-pharyngeal cavities during irrigation. The advantage of such an irrigation, in which the wound, the ear, nose, and pharynx were simultaneously cleansed, is self-evident. It was noticed after the second dressing that the motor paralysis of the right eye had partially subsided, and that the patient was now able to close the eye within one-quarter inch of complete closure. The dressings were reapplied daily for three months with but slight change in the general appearance of the wound or patient. Throughout the entire course of treatment, since the operation, there has been absolutely no pain, tinnitus aurium, vertigo, nausea and vomiting, or febrile reaction.

About the first week in November a change was noticed in the general condition of the patient. He became restless, peevish, and complained of a general feeling of lassitude with a constant drowsiness.

The clinical memoranda appended will show the most interesting factors in the development of the case.

November 5th : On redressing the wound, noticed for the first time a necrotic mass of bone, black in colour, rough in surface appearance and

touch, and projecting from the antero-lateral wall of the posterior auricular sinus. Discharge profuse and intensely foetid.

November 6th : On irrigation, numerous soft, long, discoloured shreds were washed away. Discharge in twenty-four hours amounting to half an ounce of viscid, greenish, foul-smelling pus.

November 7th : The black necrotic mass appeared nearer the surface of the sinus orifice. When touched with the tip of the irrigating syringe, it was found to yield slightly. With a strong shanked, milled-pointed dissecting forceps the mass was firmly grasped, the head of the patient steadied, and by gentle, steady traction the entire sequestrum was painlessly removed, *through the fistulous opening*. Not the slightest hæmorrhage

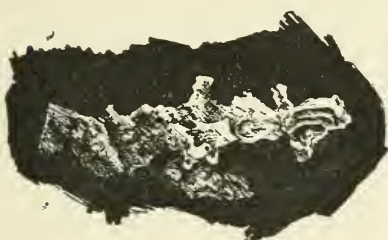


FIG. 2.—Main sequestrum; outer side; natural size. The beautifully preserved spiral of the cochlea stands out almost like an isolated picture from the rest of the petrosa. The full size of the exfoliated mass is well indicated.



FIG. 3.—Main sequestrum; inner side; natural size. The relationship of the labyrinthine structures is here clearly presented. Adjoining the prominent cochlea is the vestibular space, with the ampullæ plainly visible; also a considerable portion of the posterior semicircular canal. At the further end of the specimen is the honey-combed mass of mastoid cells. The specimen measures 36 millimètres in its longest diameter; 18 millimètres in broadest diameter.

ensued, even oozing being scarcely perceptible. The entire proceeding was borne by the patient without the least expression of pain or a single unfavourable symptom. The wound was lightly packed with iodoform gauze and the auditory canal cleansed and dried. Sound tests were then instituted, as hereinafter described.

November 8th : The discharge diminished to one-third the quantity, issuing only from the auditory canal. The posterior wound, through which sequestrum had been removed, was clean, the gauze strip being removed almost dry and without stain. Inspection reveals the walls smoothly lined with numerous soft granulations. The fœtor has disappeared. Drainage is free and clear. Antiseptic irrigation used throughout the treatment, of hydrarg. bichlor. 1-2000 and two per cent. carbolic acid, in lukewarm aqueous solution. Walking and standing tests for equilibrium were made. Results detailed later.

November 9th : The discharge remains odourless; quantity unchanged; general condition much improved.

November 11th : Patient has again assumed his former lively disposition; eats heartily; sleeps soundly; rarely offers a complaint, even of slightest discomfort. Perceptible decrease in the quantity of discharge.

November 12th : On daily inspection by special illumination, after thorough irrigation, detected a flat oblong sequestrum at distal end of long sinus, and gently removed same with small angular forceps. Removal painless and without the slightest sequence. In the depth of this wound canal a pulsating or oscillating fluid, seemingly clear and shining, was discernible, and supposed to be the mucus of the exposed Eustachian tube.

November 13th : Only traces of pus in the external auditory meatus ; small, soft necrosed masses detached from the depth of the canal and removed with forceps and syringe.

November 14th : Mirror illumination in wound canal reveals the presence of a necrotic bone mass, attached to the posterior wall of the sinus. Examined with probe, it was found loose, and with forceps this, the third sequestrum, was easily removed.

November 15th : Discharge very slight. Another small sequestrum was removed from the upper wall of the sinus. Numerous healthy-looking granulations were observed in the depth of the sinus. Patient is beginning to cough ; a hoarse, short cough with frequent expectorations.

November 16th : Discharge practically *nil*; a slight serous exudation noticed, similar to that found on granulating surfaces. Profuse granulations filling sinus.

November 20th : Again some slight discharge. Located a small focus near the distal end of the bony portion of the internal auditory canal, with accumulations of epithelial shreds and pus.

November 25th : Discharge of an even, yellowish-green colour, of thick consistency and increasing quantity. Cough has become more aggravated, loose, and expectoration profuse and of a muco-purulent character. Microscopical examination of the sputum revealed the presence of the tubercle bacillus in large numbers.

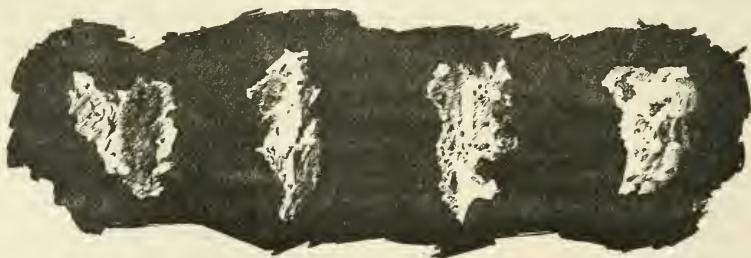


FIG. 4.—Sequestra in the order of their removal; natural size. All four sequestra were painlessly removed through a sinus of about $\frac{1}{4}$ inch average diameter. The operative procedures, including the removal of the sequestra, extended over a period of about six weeks.

December 10th : A bone sequestrum presents near the wound orifice. In restlessness of patient during attempted extraction, the mass was pushed out of place. Free communication between the sinus and the external auditory canal exists, as indicated by the probe in manipulation.

December 11th : The sequestrum again presents, this time in the

external auditory canal, with long diameter transverse to the axis of the external auditory canal. After some manipulation I succeeded in turning and removing the rounded necrotic bone mass from the posterior sinus.

December 15th : No discharge ; wound looking comparatively dry. Thorough irrigation followed by dusting canal and wound with iodoform ; very small gauze strips inserted.

December 19th : Both wound canal and external auditory canal dry ; dressing of four days' standing removed dry and unstained ; drainage perfectly clear.

January 5th : Above condition of wound unchanged. The patient is in lively spirits, talkative, and feels no discomfort from his recent treatment. He is considerably emaciated, cough is still very harassing ; expectoration very profuse. Physical examination, by courtesy of Dr. Hersman, reveals the following : In the apex of the left lung there is cavernous percussion sound, and cavernous respiration, and many gurgling *râles*. Over the entire area of the right lung there are medium-sized mucous *râles*, with slight percussion dulness ; harsh inspiration over the right apex ; prolonged expiration of raised pitch ; numerous subcrepitant *râles*. History of the case points to the probability of a rapidly developing phthisis pulmonalis. The mesenteric glands are enlarged and easily localized by palpation. The cervical and other lymph glands of the head present almost a "rosary" outline, so general, regular and continuous is their enlargement. The sputum analysis reveals the presence of numerous tubercle bacilli. Emaciation of the patient has been marked and rapid the past few weeks. A phthisical febrile reaction has also been noted ; regular rise of temperature, accompanied by night sweats and continued coughing.

By far the most interesting and important factor which presents itself for consideration in this case is the *existence of the faculty of hearing on the affected side, after removal of the cochlea and deep structures of the petrosa.*

I have been thoroughly cognizant of the difficulties and responsibilities attending an effort to substantiate so radical a statement, and have necessarily adopted the most careful methods and delicate tests to convince myself of the accuracy of my conclusions. The most serious obstacle to contend with was the exclusion of the healthy ear from the sound tests which were instituted. In the majority of the tests made I adopted the method suggested by Dennert and Lucae, with modifications. In determining what degree of sound perception still exists in an affected ear in a case of one-sided deafness, the healthy ear of the patient is stopped, turned towards the source of sound and the tests then made, the affected ear being alternately opened and closed. Whatever difference in the hearing is then elicited is attributed to the affected ear.

A more delicate modification of this method has been successfully used by Burnett. The patient is so placed that the affected ear is toward the operator. The healthy ear (not the ear to be tested) is plugged. With the affected ear open, hearing tests are then instituted. Having thus reached the *apparent* limit of the *hearing power* of the *affected* ear, that ear is then closed, and the tests continued. If the closure of the

deaf ear causes no difference in the hearing distance already obtained, it is fair to conclude that whatever amount of hearing exists is not due to passage of sound through the external auditory canal of the affected ear turned towards the test. In such a case the conclusion must, therefore, be that sound has reached the brain through the agency of the healthy ear. If, however, the stoppage of the affected ear is accompanied by an absolute inability to hear sound tests, it is again rational to conclude that this difference in the hearing power must be attributed to the affected ear. Thus, the final conclusion: "*Whatever is heard just as well with the deafer ear stopped as when open, the better ear remaining stopped throughout the testing, must still be heard by the better ear through the head; but whatever is heard only with the worse ear open, the good ear being stopped, must be attributed to the worse ear.*"

The question might be asked, why cannot sound be conveyed to the deaf ear through the head, if it is conveyed to the better ear which is stopped and turned away from the sound source? The reply would be that an ear which, either when stopped or open, perceives no difference in sound conveyed by the meatus is not sensitive enough to hear sound conveyed to it through the head.

In the consideration of the case at hand, bone-conduction tests by aid of tuning-forks were excluded, as they were deemed less delicate for differentiation than aerial sound conduction. Furthermore, as our dealings were directly with an exfoliated labyrinth, the tuning-fork, relative to bone-conduction, was practically of no value.

The following tabulated relations will indicate clearly the conclusions reached in hearing tests of the affected ear:—

Hearing tests.	Hearing capacity with both ears closed.	Hearing capacity with affected ear open and good ear closed.
Loud conversation	10 ft.	30 ft.
Whispered conversation.....	1 ft.	3 ft.
60 in. watch	2 ins.	6 ins.
Politzer's acoumeter designated by patient as a loud ticking watch	6 ins.	14 ins.
Galton whistle; pitched high	12 ins.	2 ft.
Differentiation in sound of C from C ⁴ tuning- fork	3 ins.	14 ins.
Musical notes of a long-sounding harmonium. Differentiation of C (third octave) from C (fifth octave).....	14 ins.	3 ft.

In the execution of the enumerated tests the patient was blindfolded; the plugging of the meatus was done by a competent assistant, the forefinger being used as a tight plug. Taking into account the age of the patient and all tendencies to a possible misrepresentation of the hearing capacity, the tests were repeated at frequent intervals with many variations, yet the tests proved doubly valuable owing to the demonstrable accuracy of the patient's statement.

Next in the order of importance of the clinical phenomena observed was the preservation of the equilibrium and balance of the patient. As

previously stated, one hour after the operation, patient was up and *walking home* with absolutely *no trace of altered equilibrium*. Walking and standing tests have been repeated frequently, varying the same in every conceivable way by blindfolding the patient, testing with eyes closed, permitting the patient to walk under the influence of loud noises, etc. The results are always positive; his gait firm and steady; the power of equilibrium preserved to a nicety.

A factor of great interest is the prominent *rôle* played by the bacillus tuberculosis in the development of this case. Early in the history of the case a microscopical examination was made of the discharge from the ear, and the presence of the tubercle bacillus demonstrated. A physical examination at that time gave no indication of a phthisical onset. The free communication of the suppurative aural focus with the pharynx; the tendency to frequent swallowing of this purulent material infected by the tubercle bacillus; the gastro-intestinal disturbances; incessant coughing; profuse expectoration; febrile reactions; enlargement of the lymphatics of the entire system; rapid emaciation; great prostration; and finally, the involvement of the lungs, as determined by recent examination; the demonstration of the presence of the bacillus tuberculosis in the sputum—this well-marked series of symptoms point to a development of a rapid phthisical process. It seems rational and reasonable to conclude that this acute phthisis is, perhaps, a secondary development of the original tuberculous process in the ear.

In maintaining my position in the case at issue, with my conclusions drawn from the careful tests made and clinical phenomena observed, I realize that I am treading on delicate ground, and that the presentation of these results opens for consideration a new phase of development in the theory of sound, and in the complicated functions of the labyrinthine structures.

It is not my purpose to discuss the *pros* and *cons* of the theories which the results obtained in the present case may suggest, but to indicate in the presentation of this series of simple firm facts the existence of some inaccuracies in the now accepted theory of sound, and in the functioning of the semicircular canals in relation to balance and equilibrium.

POST-MORTEM NOTES.

The diagnosis and progress of a rapidly developing and speedily terminating miliary tuberculosis, as a complication and infection secondary to the aural disease in the case at issue, expressed in the preceding pages, was thoroughly substantiated in less than one month after presentation of the patient, and complete demonstration of the results attained, before the local medical fraternity.

Jan. 5th: Patient was presented at the Saint Louis Medical Society. He was then bright, active, and in good spirits.

Jan. 15th: General depression; painful, incessant cough; profuse expectoration, showing bacillus tuberculosis abundantly on microscopic examination; intense dyspnoea; febrile disturbances; abdominal pains; severe diarrhoea. The only cerebral symptom, a mild stupor. A pro-

gressive emaciation and prostration, with continuance of these symptoms, was followed by the death of the patient on January 29th.

Unfortunately, permission was not granted for a complete autopsy. The right temporal bone was removed, and the involved area carefully inspected.

The dry antiseptic dressing, which had been applied ten days ago, was removed perfectly clean. The post-auricular region had a healthy appearance ; the sinus was almost closed.

Examination of the affected temporal bone corroborates our statement of the extensive necrosed and exfoliated areas. Circumscribing the region of the osseous external auditory meatus, and involving the mastoid and squama, with a radius of about three-quarters of an inch, is a necrotic zone with irregular but well-defined margin. Designating this as the base of a long, cone-shaped canal, we note an axis of about two and one-half inch length, directed downward, inward and backward, with the apex merging into the Eustachian tube. This cone-shaped sinus, through which the exfoliated bone masses were removed, is now filled with quite firm closely meshed granulations.



All landmarks of the osseous external meatus and tympanic cavity have disappeared. Of the petrosa the superior wall and part of the posterior portion of the meatus auditorius internus still remains intact. Examined while fresh, the portion of the nervus acusticus lodged in the depth of this canal was, to all appearances, normal in colour and consistency.

After removal of the bone, the exposed cavity was carefully examined, with special stress laid on the cranial areas in direct relationship to the necrosed bone. On the periosteal surface of the bone still remaining numerous erosions and irregularities are noted, yet the dura mater at all points was perfectly firm and intact.

With the existence of a so disseminated and rapidly progressing tubercular process, our anticipations of the presence of a tubercular meningitis might have been well founded ; the most careful and detailed search, however, failed to reveal any meningeal lesion whatever.

As it was not my intention in the present article to enter into a discussion of the probable theories of the physiology of acoustics of the diseased organ, neither do I propose suggestions relative to these *post-mortem* annotations.

It may be remarked that in a case of miliary tuberculosis, with the primary infection an aural one of long standing, and a necrosis which, by its bone destruction, exposes to direct contact with the specific suppurative processes the largest portion of the temporal lobe, frontal sinus and temporal section of the internal carotid artery, the absence of any meningeal or cerebral complications is of rare occurrence.

ABSTRACTS.

DIPHTHERIA, &C.

Hedeler (Erdevik, in Slavonia). — *Behring's Antitoxin*. "Wiener Med. Presse," 1895, No. 6.

OF thirty-five prophylactically inoculated cases, two got diphtheria. Of thirty-two cases treated with antitoxin, five died ; while, of ten cases without it, eight died.

Michael.

Bacteriological Examinations of Cases of Diphtheria and Suspected Cases.
"Deutsche Aerzte Zeitung," 1895, No. 5.

THE "Medizinische Waarenhaus" in Berlin is about to institute a station for the bacteriological examination of all cases sent by practising physicians. The institute will be carried on in the same manner as that of New York, described in this Journal, No. 2.

Michael.

Reiche (Hamburg).—*Mixed Infections in Diphtheria*. "Centralbl. für innere Medicin," 1895, No. 3.

In forty-two cases of diphtheria Loeffler's bacilli were found ; in all cases there were also found other micro-organisms ; in sixty-four per cent. streptococci, in the other staphylococci. In the kidneys and the spleen there were streptococci and staphylococci, but only rarely Loeffler's bacilli.

Michael.

Thiele (Kappel-Chemnitz).—*Prophylaxis of Diphtheria*. "Aerzte Rundschau," 1895, No. 12.

NOTHING new.

Michael.

Drasche.—*Antitoxin in Diphtheria.* "Wiener Med. Woch.," 1895, No. 6.

SEE the report on the meeting of January 25th. 1895, of the Königlich Gesellschaft der Aerzte in Wien. *Michael.*

Jessop (London).—*Two Cases of Diphtheritic Conjunctivitis treated by Klein's Antitoxin.* "Lancet," Feb. 9, 1895.

Two cases described before the Ophthalmological Society, where the membrane appeared on the palpebral conjunctiva. One to one and a half drachms of Klein's antitoxin were injected, the membrane disappearing in four or five days.

Dundas Grant (St. George Reid).

Johannesen (Christiana).—*Immunization in Diphtheria.* "Deutsche Med. Woch.," 1895, No. 13.

Of twenty-six immunized children one got diphtheria.

Michael.

Jacobson (Prussian Stargard).—*Two Tracheotomized Children treated with Antitoxin.* "Deutsche Med. Woch.," 1895, No. 13.

Two children affected with diphtheria were treated by antitoxin; in both cases there followed laryngeal diphtheria, and tracheotomy was necessary. Both children recovered. One had, three weeks later, a recurrence. *Michael.*

Monti (Wien).—*Contribution to the Application of Antitoxin in Diphtheria.* "Wiener Med. Woch.," 1895, No. 4.

Heim (Wien).—*Treatment of Diphtheria with Heilserum in St. Joseph's Kinder Hospital in Wien.* "Wiener Med. Woch.," 1895, No. 4.

Unterholzner (Wien).—*Results of Treatment of Diphtheria by Behring's Serum in the Leopoldstädter Kinder Hospital in Wien.* "Wiener Med. Woch.," 1895, No. 4.

SEE the report of the meetings of the Gesellschaft der Aerzte in Wien in January, 1895. *Michael.*

Loewy (Saatz).—*Results of Eleven Cases treated with Antitoxin.* "Allg. Wiener Med. Zeitung," 1895, Nos. 11 and 12.

EXTENSIVE description of eleven cases, of which ten were cured. *Michael.*

Mya (Florence).—"Wiener Med. Blätter," No. 54, 1894, "Lancet," Jan. 5, 1895.

TREATED eighteen cases with Behring's serum, with two deaths. In all tracheotomy was performed.

Troyman (Frankfort-am-Oder).—"Deutsche Med. Woch.," No. 51, 1894. "Lancet," Jan. 5, 1895.

MENTIONS a case treated with serum on the third day; disappearance of membrane on the fifth day, with reappearance within a week, followed by rash and hæmorrhagic nephritis. Recovery.

Baginsky (Berlin).—*Experience of the Serum Treatment of Diphtheria.* "Berliner Klin. Woch.," No. 52, 1894. "Lancet," Jan. 5, 1895.

THE author insists on the necessity of careful bacteriological examination before treatment, and on the necessity of continuing the general treatment with the

antitoxin treatment. He considers that nephritis is not more marked in the cases since the serum treatment than it was before, but that cardiac failure is disproportionately frequent.

Rappin.—*Report of Cases of Diphtheria treated by Serotherapy.* "Gaz. Med. Nantes," March 12, 1895.

THE author has treated by Roux's serum 46 cases of diphtheria. Of these were 16 anginas, pure or associated, with 1 death; 24 anginas, with laryngitis, with 3 deaths; 6 cases of laryngitis, with 1 death.

A. Cartaz.

Torriani (Graulnusten).—*On Antitoxin Treatment in Diphtheria.* "Correszbl. für Schweizer Aerzte," 1895, No. 8.

OF thirty-six cases treated without serum, twelve died; of thirty-three treated with serum, two died. The author recommends the treatment.

Michael.

Schröder (Altona).—*On Serum Treatment in Diphtheria.* "Münchener Med. Woch.," 1895, No. 74.

THE mortality of the Altona hospital was in the last six years about thirty per cent.; of sixty-three cases treated by antitoxin, eight (equal 12.69) died; of thirty-one tracheotomized cases, three (equal 9.67 per cent.) died. The time of treatment in the cases treated by antitoxin was about twenty days. Erythemata was observed in some cases. Three cases died from paralysis of the heart. The author recommends the treatment.

Michael.

Goldschmidt (Nürnberg).—*Founders of the Modern Treatment of Diphtheria.* "Deutsche Med. Woch.," 1895, No. 14.

A PANEGYRIC ON Loeffler and Behring.

Michael.

Vucelic (Schabatz).—*Contribution to the Treatment of Diphtheria by Behring's Antitoxin.* "Allg. Wien. Med. Zeit.," 1895, Nos. 14, 15 and 16.

OF thirty children treated, twenty-eight were cured and two died. The author relates some details and concludes: (1) the medicament has an improving effect better than any other; (2) it should be applied as early as possible; (3) also in laryngeal cases it is efficacious so that tracheotomy may be performed less frequently; (4) the subsidiary effects are not dangerous and produced by idiosyncrasy; (5) it has a prophylactic effect but not sure; (6) the injections are not painful; (7) this treatment therefore is better than any other.

Michael.

Wetthauer (Halle-a-S.).—*Serum Treatment in Diphtheria.* "Therap. Monats.," 1895, No. 2.

IN 1894 there were sixteen cases treated without serum; of those, eight were tracheotomized, and two of them died—a mortality of twelve per cent. Of thirty-six cases treated with serum, twenty were tracheotomized. Five cases (four tracheotomized) died; mortality of the operated, twenty per cent. Total mortality, fourteen per cent. The author recommends the treatment in spite of the circumstance that his results were better without serum, because he believes that the other cases were easier. Albuminuria was not more frequent in the cases treated with serum.

Michael.

Korcicka. — *Contribution to the Treatment of Diphtheria with Behring's Heilserum.* "Wiener Klin. Woch.," 1894. No. 49.

REPORT on four cured cases.

Michael.

Pfeifer (Weida). — *Two Cases of Septic Diphtheria successfully treated by Antitoxin.* "Therap. Monats.," 1895, No. 2.

CONTENTS described in the title.

Michael.

Simonovic (Milna, Dalmatia). — *Behring's Antitoxin applied by the Author on Himself.* "Wiener Med. Presse," 1895, No. 6.

THE author, having treated seven cases of diphtheria with antitoxin with good result, acquired diphtheria himself. He had membranes on the tonsils. He injected the serum. Next day the membranes enlarged. Second injection. Eight hours later shivering pains in the places injected, and in the glands and phosphatoma. Next day the membranes disappeared. Next day pains in the pharynx; hoarseness. Injection of serum followed by pain in the neck and in the joints, and an erythema exudativum. Eight days later, recovery, but an attack of slight weakness of the heart. The author is content with this result (!), but believes that local treatment must be also used, because often, as in his own case, the microscope showed streptococcus.

Michael.

Karlinsky. — *Has the Diphtheria Antitoxin an Influence on the Normal Organism?* "Wiener Med. Woch.," 1895, No. 8.

CAREFUL examinations made on himself prove that the healthy organism is influenced in no manner by Heilserum in the usual doses.

Michael.

Nil Filatow (Moskau). — *Epidemiology of Diphtheria in Southern Russia.* "Jahrb. für Kinderheilk.," Band 39, Heft 2, 3.

CAREFUL report. More of epidemiological interest.

Michael.

Funk. — *Experimental Studies on Mixed Infection in Diphtheria.* "Zeitsch. für Hygiene," Band 17, 1894.

THE author concludes: If streptococci and diphtheria bacilli are injected at the same time, the production of toxic substances by the diphtheria bacilli is increased. The specific effects of the diphtheria bacilli are not influenced by the streptococci.

Michael.

Pertik. — *Contribution to the Anatomy of Diphtheritic Paralyses.* "Pester Med. Chir. Presse," 1894, No. 11.

THE author has examined in three cases of death from diphtheria the medulla spinalis, the vagus, phrenic, peripheral nerves, and pharyngeal muscles. In the medulla he found atrophic destruction of the nervous cells and degeneration of Gall's funiculi; in the root of the nerves, degeneration; in the peripheral nerves, dilatation of the perineural space; no further degeneration. The sudden death in some cases is probably caused by degeneration of the vagus.

Michael.

Vierordt (Heidelberg). — *Experiences on Diphtheria since the introduction of Behring's Serum.* "Deutsche Med. Woch.," 1895, No. 11.

IN recent years the mortality varied between forty-one and sixty-seven per cent. During the period treated with serum it was twenty-five per cent. Of fifteen tracheotomized, seven died—equal to forty-six per cent. Of twenty-three children who came into the hospital with laryngeal symptoms, nine recovered without

tracheotomy—a relatively high number. Of those without laryngeal symptoms, only one acquired slight cough after the treatment with antitoxin. In 1894, of twenty-three children without laryngeal symptoms, nine afterwards got laryngeal diphtheria. Pharyngeal paralyses were sometimes observed. Grave damage from the treatment was not observed. The author recommends further experiences with antitoxin. *Michael.*

Frankel, C. (Marburg).—*Etiological Significance of Loeffler's Bacillus.* "Deutsche Med. Woch.," 1895, No. 11.

POLEMICAL article concerning Hausemann's paper, which denies the etiological significance of the diphtheria bacillus. The author defends the views of Loeffler. *Michael.*

Hasche (Hamburg).—*Anatomical Examination of a Case of Extensive Post-Diphtheritic Paralysis with Negative Result.* "Münchener Med. Woch.," 1895, No. 11.

CONTENTS given in the title.

Michael.

Hoppe (Elberfeld).—*Case of Pharyngeal Diphtheria combined with Conjunctival Diphtheria treated by Behring's Antitoxin.* "Deutsche Med. Woch.," 1895, No. 12.

THE case was cured, and the author recommends this treatment.

Michael.

Neumayer.—*Two Cases of Diphtheria treated by Antitoxin.* Vereins-Blatt des Pfälzischen Aerzte, Nov. 10, 1894.

REPORT on two cases. One of them died.

Michael.

Demuth.—*Three Cases of Diphtheria treated by Behring's Antitoxin.* Vereins-Blatt des Pfälzischen Aerzte, Nov. 10, 1894.

REPORT on three cured cases.

Michael.

Risel (Halle).—*Experiments made in Halle-a-S. with the Application of Antitoxin.* Nov. 11, 1894, Jan. 15, 1895. "Deutsche Med. Woch.," 1895, No. 10.

OF eighty-nine private patients eighty-three recovered. Of those, nineteen laryngeal diphtherias, with fifteen cures. Of twenty-five patients treated in hospitals, twenty-two recovered. Of those, fifteen laryngeal diphtherias, with twelve cures. Of nineteen tracheotomized, fifteen were cured. *Michael.*

Weiland (Waldkirch).—*Antitoxin Treatment.* "Deutsche Med. Woch.," 1895, No. 10.

TWENTY cases of diphtheria treated with the serum were cured.

Michael.

Kassowitz (Wien).—*Epilogues to the Diphtheria Discussion.* "Wiener Med. Presse," 1895, No. 5.

POLEMICAL article concerning Wiederhofer's paper, and refuting the attacks of this author. (See the report of the Wiener Aerzte Gesellschaft.) *Michael.*

Muralt.—*Experiences of Antitoxin Treatment in Diphtheria.* Gesellschaft der Aerzte in Zürich. Meeting, Jan. 26, 1895. "Correspbl. für Schweizer Aerzte," 1895, No. 5.

THE author has treated fifty-eight cases of diphtheria with the serum, and has made sixteen prophylactic inoculations in healthy children. Of the diphtheritic

children, twenty-two were grave cases, nine medium, and thirty-six slight. There were fourteen intubations and one tracheotomy. In nearly all cases an improving effect could be established. Albuminuria was observed in three of the sixteen immunized cases. Of fifty-eight cases, two died. Of seventy-one cases treated in the same year without serum, seventeen died. Of six hundred and ninety cases treated (1874 to 1891), forty-three per cent. died. The author concludes that serum is, without doubt, effective against diphtheria. The earlier the treatment begins the more sure is the effect. Also in some cases of mixed infections it has good results, and, therefore, it should be applied in all cases of diphtheria. Great damage from the application has not yet been observed. The author recommends the application. Concerning the immunizing value, nothing sure can as yet be said.

BLATTORER has applied the serum treatment in the surgical clinic. Of thirty-eight cases of diphtheria, twenty-nine were cured, and nine died (equal to 23·6 per cent.). The mortality had been, without serum treatment, in the same year thirty-seven and a half per cent. Exanthemata and albuminuria were observed in some cases.

SILBERSCHMIDT has examined one hundred and twenty-five cases of diphtheria. In ninety-one cases he has found diphtheria bacilli. Streptococci are found in the greater number of the cases. In twelve cases the "bacilli court" (Roux) pseudo-diphtheria bacilli could be found. He also has examined cases after the treatment with antitoxin, and has often found in cured cases bacilli five to thirty-two days after the complete cure.

ZEHNDOR reports on the results obtained by serum treatment in London.

LEUCH: Of forty-one immunized persons, two got diphtheria. In some cases the injection was followed by exanthemata. A favourable influence on the diphtheria mortality in Zürich cannot yet be established. The mortality was in former years 17·4 per cent.; now it is 17·1 per cent. That is no remarkable difference.

MÜLLER has had in the last years, out of about one hundred cases of certain diphtheria, six fatal cases. In three cases he has applied serum with good result.

SCHULTHESS has observed in one case a very remarkable effect from serum on the swelling of the glands and the collateral œdema.

KRONLEIN remarks that up to now a definite opinion on the serum cannot be given.

Michael.

Tirard and Willcock. — *Ten Cases of Diphtheria treated with Antitoxin.*

"Lancet," Jan. 19, 1895.

NINE cases were treated with Behring's antitoxin; one with Aronsohn's.

Case 1: Boy, aged five years. Treatment commenced tenth day of disease; tracheotomy had been previously performed on account of extreme dyspnoea. The membrane covered both tonsils, and there was an offensive nasal discharge. Pulse, 144; respirations, 48. Ten cubic centimètres Behring's No. 2 was injected; pulse remained at 140 for two days, in three days the membrane had disappeared. Pulse, 120; temperature, normal; very slight trace of albumen, which disappeared.

Case 2: Girl, aged eight years. Second day of disease the membrane covered the soft palate, uvula and tonsils, which were enlarged; much swelling on both sides of the neck; urine, one-twelfth albumen. Ten cubic centimètres Behring's No. 2 antitoxin injected, followed in two days by ten cubic centimètres Behring's No. 1. No improvement; died on third day from hæmorrhage, due to ulceration of tonsillar artery.

Case 3: Boy, aged sixteen years. Injection of ten cubic centimètres Behring's antitoxin on fifth day. Rapid improvement. No albumen.

Case 4 : Aged ten years. Seventh day of disease. Patch on both tonsils, which were enlarged ; sanious discharge from the nose ; no albumen. Injected twenty minims Aronsohn's antitoxin. Discharged cured on the sixteenth day. Gargle of chlorine used.

Case 5 : Aged seven years. Membrane on right and left tonsils ; great pain on swallowing ; foetid discharge from the nose ; slight trace of albumen. Third day of disease, five cubic centimètres Behring's No. 1 antitoxin was injected ; no improvement. On the following day injection of ten cubic centimètres of No. 2 was followed by disappearance of the membrane and rapid recovery. Chlorine gargle was also used.

Case 6 : Aged three years. Membrane on left tonsil. Injection of ten cubic centimètres Behring's No. 1 on fifth day. Rapid recovery. Faint trace of albumen.

Case 7 : Aged two years. Membrane on both tonsils ; urine slightly albuminous. Second day of disease ten cubic centimètres Behring's No. 1 injected, and chlorine gargle used. Disappearance of albumen in urine on the second day, and of membrane on the fourth day following injection. Bacteriological examination showed Loeffler's bacillus with strepto- and staphylococci.

Case 8 : Aged five years. Ninth day of disease ; great dyspnoea ; palate, uvula, and tonsils covered with membrane ; ten cubic centimètres Behring's No. 3 injected. Tracheotomy had to be performed. The urine contained about one-thirtieth of albumen. The membrane disappeared in three days, and the child made a rapid recovery. Bacteriological examination showed Loeffler's bacillus.

Case 9 : Aged six years. Developed diphtheria in the course of pertussis. Ten cubic centimètres Behring's No. 1 injected. Rapid recovery. No albumen in urine. Bacteriological examination showed Loeffler's bacillus.

Case 10 : Aged four years. Second day of disease ; dyspnoea and cyanosis ; cellulitis of neck. Tonsils, uvula, and soft palate covered with membrane. No albumen in urine. Injection of ten cubic centimètres Behring's No. 1 solution. Relief of dyspnoea and detachment of membrane on the following day. Urticaria third day ; rapid recovery. Bacteriological examination showed Loeffler's bacillus.

Hirsch. — *Mortality in 2658 Cases of Diphtheria treated in the Königlich Chirurgischen Universitätsklinik in Berlin.* "Langenbeck's Archiv," Band 49, Heft 4.

VERY extensive and careful tables on the diphtheria cases for ten years ; must be seen in the original. Here can only be reported the interesting fact that the mortality of the different years differs as much as twenty per cent., and that the difference of mortality between those who came under treatment on the first day of the disease and those who came on the tenth day is sixty per cent. *Michael.*

Kretz (Wien).—*Report on the Post-mortem Examination of Two hundred Cases of Diphtheria, with special regard to the Cases treated by Antitoxin.* "Wiener Klin. Woch.," 1895, No. 14.

THE author gives statistics not very extensive and concludes that the serum treatment diminishes the danger of the primary process. *Michael.*

Kockel.—*On Bacteriological Diagnosis of Diphtheria by the Method of Dr. Hesse in Dresden.* Medizin. Gesellschaft in Leipzig. Meeting, Dec. 13, 1894.

THE membrane is touched with a piece of cotton wool, and this is enclosed in a test-tube and sent to a bacteriological institute. *Michael.*

Silberschmidt (Zurich).—*Bacteriological Researches on Diphtheria*. "Münchener Med. Woch.," 1895, No. 9.

SEE the report of the meeting, on January 26th, of the Gesellschaft der Aerzte in Zurich. *Michael.*

Thymann, F. (Copenhagen).—*Bacteriological Examinations of 216 cases of Diphtheria*. "Hospitals Tidende," 1895, Nos. 10-13.

IN the Copenhagen County Hospital Dr. Thymann has examined bacteriologically 216 patients, admitted to the said hospital under the diagnosis of diphtheria, with the following results:—

Number of Patients.	Appearance of the Fauces.	+ Loeffler's Bacilli.	- Loeffler's Bacilli.	Short Bacilli.
19	... Redness and swelling	... 12 cases	... 7 cases	... 0 cases
29	... Lacunar deposits	... 10 "	... 17 "	... 2 "
31	... Small membranes	... 16 "	... 12 "	... 3 "
133	... Extensive membranes	... 98 "	... 34 "	... 1 "
4	... Fauces not examined*	... 3 "	... 1 "	... 0 "

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Among other cases the author mentions that of a child, aged nine, in whom both tonsils and the uvula were entirely covered by a grey foetid membrane, and in whom later the tonsils were covered with deep ulcerations, while the uvula was totally destroyed by the ulceration, and in whom repeated examinations only revealed the presence of streptococci. In all cases of tracheotomy the bacteriological examination of the secretion from the canula gave exactly the same results as the bacteriological examination of the fauces, the total number being 26. Of the 216 cases mentioned above, 36 were complicated with croup; only 3 of these 36 patients were free from Loeffler's bacillus. Dr. Thymann gives an interesting account of four brothers and sisters infected at the same time, and in whom the bacilli found in all four cases were exactly alike, while the clinical appearance of the disease differed in all four. *Holger Mygind.*

Flexner.—*The Bacteriology and Pathology of Diphtheria*. "Amer. Journ.," Mar., 1895.

A CAREFUL compilation of most of the known literature on the subject. *Lake.*

Hunt, B. (London).—*Pathology of Diphtheria*. "Brit. Med. Journ.," March 9, 1895.

THE author referred to two kinds of immunity: first an active, second a passive, which consisted in the transference of immunity. It was shown that Roux and Yersin first proved a toxin in bouillon culture of diphtheria bacillus, the formation of which was facilitated by the passage of air over the culture media, more especially if the growth was made to float on the surface. The toxic substance was a toxalbumen probably elaborated in the bacillus, and was a weapon of the bacillus on the offensive and defensive. An antitoxin was only to be found formed in animals susceptible to diphtheria. An antitoxin was not a mitigated toxin, it was harmless, but acted as a stimulant to the tissues, which, in their turn, produced an antidotal body. In the case of diphtheria the antitoxin was anti-biotic, it was proof against toxin and bacillus. The author thought that the antitoxins were elaborated by the cells out of the toxins, which incited the cells to action. The cells took up the toxin and excreted it as antitoxin. *Wm. Robertson.*

* In all these patients tracheotomy was performed at once, and the secretion from the canula was examined bacteriologically.

Ricker (Zürich). — *On a Remarkable Case of Streptococcal Diphtheria, and on Intra-Uterine Infection of a Fetus with Streptococcus in this and in another Case.* "Centralbl. für Allg. Pathologie und Patholog. Anatomie," 1895, No. 2.

IN a patient, twenty-seven years old, pregnant for eight months, who died of diphtheria. During life Loeffler's bacilli had been found in the membrane. In the cultures made *post-mortem* Loeffler's bacilli were not found at all, but cocci very similar to streptococcus pyogenes were found in the membranes and in the mucous membrane. In the organs of the foetus and in the placenta the same micro-organisms were found. Also in a second case of diphtheria, streptococci were found in the organs of the foetus. The author concludes that such cases will probably prove that the streptococcus is the true micro-organism causing diphtheria. It is found in all cases, and also in the mucous membrane; Loeffler's bacilli only in the pseudo-membranes, though in a small number of cases in the mucous membrane.

Michael.

Taylor, Henry (Guildford). — *The Treatment of Diphtheria.* "Lancet," Feb. 16, 1895.

CALLING attention to euechlorine solution as of value in the treatment of diphtheria.
Dundas Grant (St. George Reid).

Takacz. — *Treatment of Diphtheria.* "Pester Med. Chir. Presse," 1894, No. 19.

RECOMMENDATION of internal use of a solution 4'0 chlorate of potash and 0'04 chloride of mercury in 200'0 aq. dest.

Michael.

Mackenzie, Hunter (Edinburgh). — *Note on the Treatment of Diphtheria.* "Lancet," Jan. 19, 1895.

THE author strongly advocates intubation as a complement to the antitoxin treatment in laryngeal diphtheria; pointing out that as, according to Roux, the membrane ceases to grow twenty-four hours after the first injection, and is detached at the latest by the third day, if the patient can be tided over the first twenty-four hours by intubation, the serum is allowed time to act under the most favourable conditions, and the danger of asphyxia from obstruction of the larynx is minimized.

In two cases mentioned, intubation proved most successful, the tube being permanently withdrawn in the first case on the fifteenth, and in the second case on the tenth day. The operation appeared to give immediate relief, and did not cause much annoyance to the patient, the tube being retained and removed quite easily. The author believes that intubation in time will supersede tracheotomy.

Langes (Welzheim). — *Local Treatment of Diphtheria.* Münchener Med. Woch., 1895, No. 10.

RECOMMENDATION of Loeffler's solution.

Michael.

Cuthbert, Hawkins (Aberdovey). — *Sulphur v. Antitoxin in Diphtheria.* "Lancet," Jan. 26 and Feb. 23, 1895.

ADVOCATES sulphur treatment as giving a better average of cases of recovery than antitoxin.

Dundas Grant (St. George Reid).

Niall, W. G. (Guildford).—*A Case of Diphtheria successfully treated by Insufflation and Tabloids of Sulphite of Magnesium.* "Lancet," Feb. 23, 1895.

EIGHT cases (four in one family) treated by insufflation and tabloids of sulphite of magnesium with satisfactory results. *Dundas Grant (St. George Reid).*

Hamilton, John (Hawick).—*Sulphur versus Antitoxin in the Treatment of Diphtheria.* "Lancet," Feb. 2, 1895.

It is pointed out that sulphur, although useful in ordinary sore throat, has no specific action in diphtheria, and the author quotes a case under treatment by sulphur which was rapidly getting worse until recourse was had to the antitoxin treatment. *Dundas Grant (St. George Reid).*

Martin, B. R. (Hammersmith).—*A Case of Diphtheria successfully treated by Insufflation and Tabloids of Pure Sulphite of Magnesium.* "Lancet," Feb. 9, 1895.

A CASE of a child aged five years. The membrane covered the uvula, soft palate, and tonsils. Loeffler's bacillus was found in large numbers, associated with streptococci. Sulphite of magnesium was insufflated three or four times daily, and tabloids of the same were given frequently. The membrane disappeared in four days, and the child made a rapid recovery. *Dundas Grant (St. George Reid).*

Navratil (Iglau).—*Hydrogen Peroxide in Diphtheria.* "Wiener Med. Woch.," 1895, No. 4.

RECOMMENDATION of internal use of this medicament.

Michael.

Goodall, E. (London).—*On Suppression of Urine in Diphtheria.* "Lancet," Feb. 2, 1895.

SIX cases of diphtheria terminating fatally, with complete or almost complete suppression of urine, treated by general and local means, with a view to point out the frequency of this complication before the treatment by antitoxin. Cardiac failure was almost always present, and was the cause of death in most of the cases, in some being preceded by convulsion. The author draws a distinction between nephritis and diphtheritic anuria, and suggests that the cause of the anuria may be the poison or poisons of diphtheria acting upon the nerves controlling the secretion of urine. *Dundas Grant (St. George Reid).*

Courmont and Dazon (Paris).—*The Temperature in Experimental Diphtheria.* "Lancet," Feb. 16, 1895.

By experiment it is found that the diphtheritic toxin has hypothermic properties, and that the fall of temperature is preceded by an incubative period, varying from two to eighteen hours. *Dundas Grant (St. George Reid).*

Gross.—*Application of O'Dwyer's Intubation in Croupous Laryngitis.* "Pester Med. Chir. Presse," 1894, No. 39.

NOTHING new.

Michael.

Paterson, Ross (Stockton-on-Tees).—*On the occurrence of Diphtheritic Paralysis without previous Faucial Affection.* "Lancet," Jan. 26, 1895.

REFERRING to his paper in the "Medical Times and Gazette," 1866. Case of diphtheritic inoculation of wound without faucial affection followed by paralysis, and calling attention to the comparative rarity of diphtheritic paralysis in the present day.

Darbonet (Boucan).—*Treatment of Non-Diphtheritic Sore Throat by Applications of Guaiacol in Glycerine.* "Med. Week," Jan. 4, 1895.

THIS treatment, first applied by Raymond, of Chicago (who used pure guaiacol, which is too irritating), has stood the test as a remedy for acute angina, and is henceforth worthy of an important place in the therapeutics of this affection. The author employs a mixture of equal parts of glycerine and guaiacol for adults, increasing the proportion of glycerine for children. Four applications are made in the twenty-four hours.

Wm. Robertson.

Goodall (London).—*An Unusual Case of Tracheal Diphtheria.* "Brit. Med. Journ.," Mar. 9, 1895.

THIS occurred in a boy aged four years, who, on the ninth day after admission expectorated a tracheal cast, and continued to bring up these for a week. The membrane evidently missed the larynx. There was albuminuria for a month, and, in three weeks' time from admission, paralysis of palate, ciliary muscles, and lower extremities. In another seven weeks the boy was well. In the first case the infection was faucial, in which was found the bacillus. W. E. Spencer, judging from certain museum specimens, thought plastic bronchitis was identical with this condition, but Sir Dyce Duckworth rightly observed that the museum specimens were wrongly labelled, and that plastic bronchitis only occurred in elderly people.

Wm. Robertson.

Rehfeld (Ahrenfelde).—*Whooping Cough Cured by Chloroform Inhalation.* "Therap. Monats.," 1895, No. 2.

A CHILD, five years old, with severe whooping for six months, had to be chloroformed because of a fracture of the femur. From that time the whooping disappeared.

Michael.

Laubinger.—*Subcutaneous Injections of Bichloride of Quinine in Whooping Cough.* "Jahrb. für Kinderheilk.," Band 39, Heft 2, 3.

REPORT on twelve cases treated with subcutaneous injections of bichloride of quinine, 1·0 of fluid containing 0·25 to 0·5 of quinine. The injections are made on the child's back twice daily. In four of the cases the treatment was accompanied by prompt success, and in others it seemed to be advantageous. The author concludes that the use of quinine is the best treatment of whooping cough, and that the subcutaneous application should be used in those cases in which the internal use is not possible from any cause. In ordinary cases the internal use has the same effects as the subcutaneous.

Michael.

Hedderich (Heidelberg).—*Ferripyrrin, a New Hæmostatic.* "Allg. Wiener Med. Zeit.," 1895, No. 12.

FERRIPYRRIN, a new medicament, composed of antipyrin and sesquichloride of iron, may be substituted with good results for the simple sesquichlorate, because it has the same hæmostatic effects without corroding the mucous membrane. The possibility of applying the medicament in the form of powder must be regarded as advantageous.

Michael.

NOSE AND NASO-PHARYNX.

St. Clair Thomson and R. T. Hewlett (London).—*Micro-Organisms in the Healthy Nose*. Abstract Paper read on Tuesday, May 28th, 1895. "Medico-Chirurgical Transactions," Vol. LXXVIII.

THE results arrived at contrast in a striking way with those obtained by the majority of previous observers, and are in direct opposition to the opinion held by many physicians and founded chiefly on *à priori* reasoning. About 500 litres of air, bearing on a low average 1500 organisms, are inspired every hour. As all, or at least the greater portion of this comes in contact with the moist mucous membrane lining the tortuous passages of the nasal fossæ, it has been taken for granted that the interior of the nose must show a rich profusion of micro-organisms. This conception is now widely adopted, and its general acceptance probably accounts for the scarcity of recorded observations of bacterioscopic examinations of the nasal cavity in a state of health.

The literature of the subject is gone over in chronological order. Only two papers have been found devoted entirely to the bacteriology of the normal condition; all other references to the healthy state are only made incidentally in the course of researches on diseased conditions. The most diverse results have been arrived at both as to the varieties and abundance of organisms met with. Only two authors—Loewenberg and Hajek—find a scarcity of bacteria in the nose; others record a greater or less variety and profusion. One observer finds the streptococcus of Fehleisen present in one out of every five healthy individuals, and another found the *diplococcus pneumoniae* (Fränkel-Weichselbaum) once in every four observations. This latter observer frequently met with the *bacillus pneumoniae* (Friedländer), the *streptococcus pyogenes*, and the *staphylococcus pyogenes aureus*, and not only in considerable numbers, but sometimes in pure culture.

The method of examination adopted by the authors was that of cultivations on agar and cover-glass preparations stained with gentian violet. No attempt was made to differentiate the organisms met with. This research only dealt with the presence or absence of bacteria, and a simple method was adopted to insure uniformity of comparison. Thirteen healthy individuals were examined. Twenty-seven cultures and fourteen cover-glass preparations were made from the vestibule of the nose. Seventy-six cultures and thirty cover-glass preparations were made from the mucous membrane of the nasal cavity. The results are summarized as follows:—

1. In all bacterioscopic investigations of the nasal fossæ, in all researches as to the action of nasal mucus, etc., a clear distinction must be made between the vestibule of the nose and the proper mucous cavity. The former is lined with skin, and is furnished with hairs and with sudoriferous and sebaceous glands; it is not part of the nose cavity proper, but only leads to it.

2. The neglect of this distinction may account for the discrepancy in previous observations on the subject. Contamination with the lining of the vestibule is difficult to avoid, even when this source of error has been realised.

3. In the dusts and crusts of mucus and *débris* deposited among the vibrissæ of healthy subjects, micro-organisms are never absent. They are rarely scanty in number; as a rule, they are abundant.

4. On the Schneiderian membrane the reverse is the case. The authors do not assert that micro-organisms are completely absent; obviously some must occasion-

ally occur, but under normal conditions they are never plentiful; they are rarely even numerous, and in more than eighty per cent. of their observations no organisms whatever were found, and the mucus was completely sterile.

5. The occurrence of pathogenic organisms must be so infrequent, that their presence on the Schneiderian membrane can only be regarded as quite exceptional.

Clinical experience bears out the above conclusions, and their application in practice is sufficiently obvious.

In conclusion, the authors touch upon the problems suggested by the above, and refer to the questions they are at present engaged in solving. *St. Clair Thomson.*

Townsend, C. W.—*Primary Nasal Diphtheria.* "Boston Med. and Surg. Journal," May 24, 1894.

THE writer, from an investigation of several cases, comes to the following conclusions:—

1. That primary nasal diphtheria may occur of a very mild type.

2. The dangerous character of these cases on account of their remaining at times unrecognized, for the following reasons—(a) Their resemblance to an ordinary coryza, a membrane not being noticed in some cases, except by careful scrutiny. (b) The normal or only slightly elevated temperature often present with but slight constitutional disturbance. (c) The intermittent character of the nasal discharge. (d) The apparent recovery, even with cessation of nasal discharge, while Klebs-Loeffler bacilli are still present. (e) The fact that the patient having the bacilli in his nose, though apparently well, may transmit the disease in a fatal form to others. (f) The difficulty of always finding the bacilli in the nose when they are present.

3. The importance of bacteriological examination in all suspicious cases of nasal discharge.

4. The importance of prolonged isolation, together with a refusal to consider a case cured until several consecutive negative cultures have been obtained.

W. Milligan.

Loewenberg. — *Chronic Cocainism of Nasal Origin.* "Bulletin Méd.," March 17, 1895.

DR. LOEWENBERG relates two cases of young women having serious toxic accidents, insomnia, visual and auditory hallucinations, attacks of mania or melancholia, anorexia, gastralgic pains and other various nervous troubles. The origin of the intoxication was the use of snuff-powder with cocaine. Instead of three or four pinches a day, for rhinitis and rhinalgic pains these patients took the powder in its entirety. The writer estimates the dose of cocaine daily snuffed as one and a half grammes. The suppression of the drug gave rise to a rapid and complete cure. The author protests against the abuse of that dangerous alkaloid in current prescriptions.

A. Cartaz.

Bergeat (München).—*Treatment of Sequestra and Rhinoliths in the Nose by Acids. Note on a Rhinolith.* "Münchener Med. Woch.," 1895, No. 12.

THE author recommends treating the sequestra and rhinoliths with mineral acids, especially hydrochloric acid, to decalcify them and facilitate in this manner their removal. He then relates a case in which he applied this method without result.

Michael.

Wroblewsky (Wien).—*Tincture of Iodine in Nasal and Pharyngeal Diseases.* "Therap. Monats.," March, 1895.

RECOMMENDATION of this medicament for treatment of nasal and pharyngeal catarrhs, and for treatment of empyemata of the antrum of Highmore. *Michael.*

Schnee (Moskau).—*A Nasal Hammer*. "Zeitsch. für Kranken.," Band 17, Heft 3.

THE author recommends the massage of the nose in cases of acute coryza, and executes the *tapottement* by knocking with a mallet which he has invented.

Michael.

Morf, J. (Winterthur).—*A Contribution to the Symptomatology of Rhinitis Chronica Atrophica, with Special Reference to the Affections of the Ears*. "Arch. of Otol.," 1894, No. 4.

FROM a study of eighty consecutive cases of ozæna in the otological clinic at Basle, the writer derived the conclusion that disease of the middle or internal ear is a frequent complication, occurring in fifty-five per cent. The middle ear was affected in thirty-eight of the eighty cases and the internal ear in eight, the disease of the former being attributable to closure or irritation of the Eustachian orifice, that of the latter to some constitutional cause, such as syphilis, tuberculosis, or infectious diseases which affect alike the nose and the internal ear. Ozæna was found chiefly in young persons, in women more than men, almost always bilateral, foetid in ninety per cent. of the cases, often affecting the naso-pharynx, rarely the larynx and trachea. In a few cases the middle turbinated bodies were hypertrophied or covered with mucous polypi, and in these there was suppuration from the accessory cavities.

Dundas Grant.

Abate, C.—*Ozæna*. "Archiv. Ital. di Laringol.," XV., Jan., 1895.

CONCLUDES with the corollaries: Ozæna is hereditary, but not contagious; a patient is born with ozæna because he is born with the tendency to scrofula; a microbe (or perhaps different microbes) is the indispensable factor of a special pathological condition of the mucous membrane, giving rise to the specific odour and change in the secretion.

St. Clair Thomson.

Winkler (Bremen).—*Malformation of the Upper Jaw in Cases of Obstruction of the Nose*. "Wiener Med. Woch.," 1895, Nos. 9 and 10.

DESCRIPTION of two cases of exquisite gothic palate, with some remarks on the relation of rachitis and nasal stenosis to the etiology of this malformation.

Michael.

Nasse (Berlin). — *Two Cases of Congenital Median Fissure of the Nose*. "Langenbeck's Archiv.," Band 49, Heft 4.

A FISSURE along the whole septum separated the anterior part of the nose into two parts, so that the septum was freely felt and seen. The fissure began in the frontal bone. Rhinoscopy showed no anomalies. The patient is eighteen years old. Up to now no operation has been tried. A similar case was observed in a child some weeks old.

Michael.

Le Dentu. — *Osteotomy of Superior Maxillary, with Section of Nasal Septum, for Uranostaphyloraphy*. "Bull. Acad. de Méd.," April 2, 1895.

THE author relates three cases of hare-lip with alveolar and palatine fissure. He believes that in these complicated cases the operation is made easier and restoration more perfect by preliminary osteotomy of palatine vault and nasal septum. Connection of the edges of the fissure is facilitated by those large liberations.

A. Cartaz.

Chaput. — *Repair of Nasal Deformities by Inter-Cutaneo-Mucous Metallic Prothesis*. "Med. Week.," Jan. 4, 1895.

WHEN the osteo-cartilaginous framework persists intact the repair of nasal deformities is easy, but when the skeleton of the nose is broken down rhino-

plasty is difficult. A frontal flap lined with a bony plate is not satisfactory. Dr. Martin supported flaps by a metal frame, but the metal becomes infected by exposure to the air, and suppuration ensues. Chaput's improvement consists in imbedding the frame in the tissues. This frame is triangular in shape, furnished with points at the angles. One point is received into a hole drilled in the bone at the level of the nasal spine, the other two being placed in the maxilla a short distance externally to the *alæ nasi*. This inter-cutaneo-mucous metallic prosthesis succeeds well.

Wm. Robertson.

Black, A. M.—*The Nasal Trephine in Hypertrophy of the Inferior Turbinated Bone.* "Annals Ophth. and Otol.," Jan., 1895.

THE author's trephine is two and a half inches long, and he advocates its use in hypertrophy and vascular engorgement of the inferior turbinated. There is no discharge after twenty-four hours; there is no cicatrix, and no alteration in the shape of the bone, and there is no risk of adhesion to the septum.

Lake.

Winslow, J. R.—*A Case of Congenital Osseous Occlusion of the Choanæ.* "American Med. Surg. Bulletin," Feb. 15, 1895.

THE patient, a male, aged eighteen, came to the hospital complaining of deafness and pain in the left ear. He was unable to breathe through the nose, and his voice was "nasal." Examination revealed pronounced granular pharyngitis, velum palati paretic upon the left side, larynx normal, and anterior nares unobstructed. Posterior rhinoscopy showed that the naso-pharynx was blocked up by an ovoidal mass of tissue. None of the post-nasal structures were visible. A steel bougie passed through the left nostril could neither be seen nor felt in the naso-pharynx. The growth was supposed at first to be either a fibroma or a fibro-sarcoma, but upon attempting to remove it nothing but adenoid tissue came away. Shortly after this it was seen that a band of hard, bony tissue stretched across the post-nasal space and hid the greater part of the turbinated bodies from view. This osseous lamella was gradually cut away by means of an electrode, with the result that nasal respiration was re-established, and marked improvement in the hearing power ensued.

W. Milligan.

Baratoux.—*Foreign Bodies in the Antrum.* "Progrès Méd.," April 6, 1895.

THE author relates two cases. In the first, after evulsion of a carious tooth, the wool tampons were protruded in the sinus and the operator drew back a packet as large as an orange.

In the second case, the perforation in the alveolar process had been dilated with laminaria, a piece of which fell back in the sinus, and the patient suffered from a permanent suppuration of the antrum and nose. A large opening in the canine fossa permitted of the discharge of a large abscess, but the foreign body escaped and was not discovered. During six years many operations were insufficient, and one day the piece of laminaria came to the orifice of the alveolar perforation and was extracted, when rapid cure resulted.

A. Cartaz.

Dmochowsky (Warschau).—*Inflammatory Dropsy of the Antrum of Highmore.* "Centralt. für Allg. Path. und Patholog. Anatomie," 1895, No. 5.

In the *post-mortem* examination of a patient, thirty-two years old, the author found concretion of the introitus antri, and the cavity filled with serous fluid. *Intra vitam*, no sign of disease of the nose or upper jaw was recognizable.

Michael.

Panas.—*Empyema of the Maxillary Sinus—Orbital Periostitis—Abscess of the Frontal Lobe.* "Bull. Acad. de Méd.," March 12, 1895.

A MAN, thirty-one years old; dental headache and dental caries; purulent rhinitis. A fortnight later, on the morning of the 13th of April, the patient was stupefied by sudden blindness of the right eye, violent pains in the face, fever and chills. On the 16th he came to the ophthalmological clinic with tumefaction of the right eyelids and cheek, considerable chemosis and discolouration of the papilla. Trephining of the antrum, discharge of foetid suppuration, incision of eyelid and drainage were followed by a fall of temperature, diminution of the violent pains, and slight amelioration of the blindness. On the twentieth day cephalalgia, chills, vomiting, ending in death. At the necropsy there were found osteo-periostitis of the orbit secondary to suppuration of the antrum, abscess of the frontal cerebral lobe, with staphylococcus aureus and streptococci, and atrophy of the optic nerve from compression in the inflamed optic canal. *A. Cartaz.*

Cleveland, A. H.—*Carcinoma of the Right Maxillary Antrum.* "Med. News," Mar. 9, 1895.

THE patient, a female, aged about sixty, gave the history of having had nasal trouble for at least three months. The right side of the nose was blocked, and there was a considerable discharge of muco-purulent fluid. She also complained of pain in the right ear and of deafness. On examination the lower turbinate was somewhat enlarged, and the middle much enlarged and inflamed. The right membrana tympani was thickened, the left thickened, opaque, and calcareous in the posterior inferior segment. The patient gradually became worse, and upon admission into hospital the following condition was noted: The entire right side of the face was swollen, the right eye was prominent, the lids œdematous, and considerable conjunctivitis was present. The pain in the ear was severe and persistent. Operation was deemed inadvisable. The patient died shortly afterwards, and the following condition was found: A large, extradural mass involved the neighbourhood of the sphenoid bone superiorly, extending anteriorly to the crista galli and the orbital plate of the frontal bone upon the right side, and posteriorly nearly to the anterior margin of the petrous bone. The sella turcica was broken down, and incorporated in the mass. The right optic foramen was enlarged and the bones disorganized. The eye upon this side was diseased, and discharging pus. The right maxillary antrum was filled with a gelatinous mass mixed with pus. The growth and its position pointed to its having originated in the antrum. Microscopic examination showed the growth to be carcinomatous.

W. Milligan.

Heflebower, R. C.—*Opening of the Accessory Nasal Cavities in Chronic Empyema.* "Cincinnati Lancet Clinic," Feb. 23, 1895.

THE author lays stress upon the following points:—

1. To remove radically all the diseased tissue through a broad opening in the anterior wall.
2. To maintain this opening throughout the entire treatment of the case.
3. To arrange that the patient himself may in part undertake the after-treatment.

The author's method of opening the maxillary antrum is as follows. The entire anterior wall up to the level of the infra-orbital foramen is removed by means of chisel and bone forceps. Granulation tissue, sequestra, etc., are now removed by means of a sharp spoon. The mucous membrane which has been reflected upwards is now tamponed as deeply as possible into the large opening

thus formed, in order to obtain its adhesion to the inner walls of the antrum, to maintain the opening and to facilitate the introduction of the obturator. The author remarks upon the extreme difficulty in *completely* arresting antral suppuration, and upon the necessity of great patience and perseverance in the after-treatment.

W. Milligan.

Herzfeld (Berlin).—*Treatment of Empyema of the Frontal Sinus*. “Deutsche Med. Woch.,” 1895, No. 12.

THE diagnosis of chronic empyema may sometimes be rather difficult, and the cure of the affection sometimes dubious, even if the sinus is opened by operation. The author believes that the opening by the nose is too dangerous, because the lamina cribrosa might be injured by the instrument; he therefore recommends the frontal operation and describes three cases in which he has performed it. (1) A patient, forty-five years old, acquired a coryza in 1885, followed by chronic left-sided headache. Then followed swelling of the left half of the forehead. Opening of the antrum of Highmore without improvement. Then opening of the frontal sinus, discharge of foetid pus; enucleation; cure. (2) A patient, aged nineteen. Many polypi had been removed from his nose since his youth. Opening of the frontal sinus; discharge of caseous pus; cure. (3) A patient, fifty years old, had for many years otorrhoea, discharge of pus from the nose, swelling of the frontal bone. Operation; cure.

Michael.

Müller, Leopold (Wien).—*Empyema of the Frontal and Ethmoidal Sinuses*. “Wiener Klin. Woch.,” 1895, Nos. 11 and 12.

(1) A PATIENT, twenty-three years old, suffered eight days with headache, swelling and reddening of the left eye. The eyelid was red and swollen, its mucous membrane chemotic, and there was high fever. Incisions were made in the swollen part without effect; therefore some days later the sinus frontalis and skull were opened by Billroth, and pus was evacuated from the sinus and the subdural region. The bones of this region were carious. Within the next few days the pus became putrid, and opening of the dura mater was practised. No abscess was found there. *Exitus lethalis* followed. The *post-mortem* examination showed empyema of the frontal sinus and meningitis. (2) A patient, twenty years old, was affected with inflammation of the eyelid and extreme cedema of the conjunctiva. By incision no pus was removed. The frontal sinus was trephined. Evacuation of pus; drainage. Three weeks later cure. The differential diagnosis between orbital and frontal processes is often very difficult.

Michael.

Heller (Nürnberg).—*Naso-Pharynx in Pathology; Clinical Study*. “Deutsche Archiv für Klin. Med.,” Band 55, p. 540.

THE naso-pharynx is the situation of many acute and chronic infectious diseases. It is in normal health the preserver of the organism, because the major part of inspired inorganic and organic matters suspended in the air are retained here, and prevented from entering the deeper parts.

Michael.

Meyer, Wilhelm (Copenhagen).—*Adenoid Vegetations; their Distribution and Antiquity*. “Hospitals Tidende,” 1895, No. 6.

THE discoverer of adenoid vegetations, Dr. Wilhelm Meyer, of Copenhagen, has written an elaborate and interesting article on the distribution and antiquity of these growths. Dr. Meyer has endeavoured to collect evidence of the existence of adenoid vegetations in different parts of the world and in the different races. In Greenland Dr. Helms among sixty Esquimaux children, between six and fourteen

years of age, found only sixteen who were free from adenoid vegetations, while the remaining 73·3 per cent. suffered from the disease. In North Dakota Dr. Quarry found adenoid vegetations frequently among the native Indian tribes, but the growths were but little developed in the adults. Dr. Cantley, of Hongkong, reported to Dr. Meyer that the native Chinese of the Mongolian race, as also those belonging to the mixed Chinese Portuguese race, frequently suffered from adenoid vegetations. In Bangkok Dr. Deuntzer rarely found adenoid vegetations among the native Siamese. Dr. Romback, medical superintendent in the Dutch Indian colonies, collected evidence from several military surgeons, with the following results. In Singkil, on the north-west coast of Sumatra, one hundred and thirteen natives were examined; of these, three—*i.e.*, 3·5 per cent.—had adenoid vegetations. On the island of Amboina three hundred and twenty-six school children were examined, with the result that none of the girls and two of the boys (equal to 0·8 per cent.) had adenoid vegetations; on the island of Saparoua none of one hundred adults examined had the growths mentioned, whilst five out of seven hundred and seventeen school children (equal to 0·7 per cent.) suffered from them. Dr. Meyer accordingly comes to the following conclusions. Adenoid vegetations are to be found with different frequency in at least three parts of the world—*viz.*, Europe, America and Asia; the Mongolian race is almost as much predisposed as the Arian; a warmer climate seems less favourable to the development of the growth than a cold one. Dr. Meyer has, further, with great perseverance studied portraits and busts in numerous European collections in order to detect as far back in time as possible undoubted sufferers from adenoid vegetations. The principal results of this very interesting examination are the following. As a proof of the existence of adenoid vegetations in the commencement of the present century, numerous portraits of the eminent sculptor, Canova, are mentioned. They all depict the artist with an open mouth, a narrow nose, and a languid expression, and one of his pupils has stated that the great sculptor was somewhat deaf. Dr. Meyer also found indisputable evidence that the Emperor Charles the Fifth had adenoid vegetations; he also notoriously suffered from asthma, and that this disease was not produced by nasal polypi is proved by the fact that the earlier portraits of the emperor are much more typical than the later ones. King Francis the Second of France, the first husband of Mary, Queen of Scots, who, according to the French otologist Potiquet's recent investigations, suffered from adenoid vegetations, has, according to Dr. Meyer's opinion, perhaps suffered from these growths. But Dr. Meyer points out that his nose is far from being typical. It is, therefore, doubtful whether the king did not suffer from nasal polypi. Among ancient Greek sculpture Dr. Meyer has not found a single instance which might serve as a proof of the existence of adenoid vegetations in ancient Greece. This might, however, be explained by the circumstance that the ancient Greek artists had a tendency to idealize the human features. Several ancient Roman statues and busts, on the contrary, show undeniable evidence that adenoid vegetations existed as far back as Roman art goes. As the most pronounced examples, Dr. Meyer quotes Nos. 80, 189 and 192 in the Chiaramonti Gallery in the Vatican, of which three busts the two first mentioned represent children. Dr. Meyer, finally, concludes that it is probable that adenoid vegetations have existed since the early ages.

Holger Mygind.

PHARYNX, &c.

Kutner, R. (Berlin).—*Hydrogen Peroxide as a Disinfectant for the Mucous Membranes.* "Deutsche Aerzte Zeitung," 1895, No. 5.

RECOMMENDATION of this medicament for inhalation and gargling. *Michael.*

Lagoutte.—*Atrophic Scirrhus Carcinoma of the Tongue.* "Gaz. des Hôp.," May 29, 1894.

A MAN, aged sixty-one years. No syphilitic history. Seven years ago he developed white patches on the tongue and leukoplasmia, probably from smoking, and during the last eight months ulceration of the mucous membrane, the tongue becoming, little by little, contracted, atrophied and deeply fixed in the floor of the mouth. Now the tongue is unmovable, hard, atrophied—not very painful; swallowing and speech are very difficult owing to the immobility of the tongue. Submaxillary glands hypertrophied and hard. Emaciation. The author believes it is a rare specimen of scirrhus carcinoma of the tongue. *A. Cartaz.*

Heller (Kiel).—*Contribution to the Knowledge of Soor.* "Deutsche Archiv für Klin. Med.," Band 55, p. 122.

REPORTS on twenty-five carefully examined cases of soor of the larynx, trachea, and œsophagus, found in *post-mortem* examinations. In a large number of the cases the soor has penetrated the epithelium. Experiments made with soor implanted on trachea and œsophagus showed that the micro-organism does not perforate the epithelium in cadavers, and it therefore is proved that it can enter the blood-vessels and deeper parts *intra vitam*. These results also prove that the micro-organism is not so harmless as at present is believed. *Michael.*

Sheild (London).—*Notes of a Case of Salivary Calculus presenting Unusual Symptoms.* "Brit. Med. Journ.," March 2, 1895.

THE case was that of a man, aged thirty-five years, who complained of a hard lump in the floor of the mouth, and a small tumour in the neck, painful after eating. Over the tumour in the mouth there was an excrescence which simulated cancer. With a needle the author discovered the calculus, which was further demonstrated by the patient spitting a piece out. The rest was removed *secundum artem*. (The reporter met with a similar condition in a bushman while in practice in South Africa. The stone was the size of a bantam's egg in this case.)

Wm. Robertson.

Mounier.—*Electro-Amygdalotomy for Ablation of Tonsils without Hæmorrhage.* "France Méd.," March 15, 1895.

HE advocates the use of the galvano-caustic loop for ablation of the tonsils, and finds as advantages rapid operation and complete hæmostasis. *A. Cartaz.*

Kretschmann.—*Instrument for Treatment of Certain Forms of Hypertrophied Tonsils.* "Münchener Med. Woch.," 1895, No. 5.

FOR cases in which the tonsils are imbedded between the arches of the palate, and cannot be removed by usual tonsillotomies or bistouries, the author recommends a cutting forceps for *morcellement* of the organs. *Michael.*

Lewin (Berlin).—*Influence of Lesions of the Pharynx and Nose on the Lingual Functions.* "Med. Week," Feb. 1, 1895.

THE author had occasion to treat a patient affected with syphilis who, a few years later, came back with a tumour occupying the region of the foramen cæcum of Morgagni. The left half of the tongue was atrophied, due to tonsillar paralysis. The lesion which explained stuttering in persons suffering from cerebral affections, or who are intoxicated, was compression of the hypoglossal nerve, where the posterior cerebellar artery branches off from the vertebral. Here one fibre of the root of the great hypoglossal nerve passes above this artery, and another fibre below it. The effect of this arrangement is that when a cerebral congestion occurs the vertebral artery, in dilating to the utmost, compresses the hypoglossal nerve. Luschka explains in the same way the stuttering of intoxicated individuals, on the assumption of compression of the great hypoglossal nerve, resulting from dilatation of the venous plexus surrounding the latter where it leaves the cranium in the anterior condylar foramen.

Wm. Robertson.

Walter (Charlottenburg).—*Rare Case of Tuberculous Ulcer of the Palate.* "Therap. Monats.," 1895, No. 2.

A PATIENT, thirty-eight years old, affected with tuberculosis of the lungs and larynx, complained that when he swallowed fluids, they escaped by the nose. Examination showed a perforation of the hard palate, through which the antrum of Highmore could be seen. The wall of the ulcer was covered with miliary tubercles. The ulcer followed the extraction of a carious tooth. The patient died a short time later. In literature the author only found two similar observations, published by Kustner and Rethi.

Michael.

Griffin, E. H.—*A Case of Tuberculosis of the Pharynx.* "New York Med. Journal," Feb. 16, 1895.

THE patient, a girl, aged nineteen, came under the author's treatment, complaining of a slight accumulation of mucus, which she hawked up each morning. Laryngeal examination showed nothing definite. The pharynx was congested, with here and there greyish-white spots scattered over the membrane. Examination of the lungs proved negative. Shortly afterwards, however, tubercle bacilli were found in the sputum. The patient became rapidly worse, and died shortly afterwards. The author remarks upon the rarity of pharyngeal tuberculosis, and also upon the fact that the nearer the air the tubercle bacillus is ingrafted the quicker the death of the patient.

W. Milligan.

Battle (London).—*Syphilitic Stenosis of the Pharynx.* "Brit. Med. Journ.," Feb. 16, 1895.

IN this case, a man, aged twenty-four, there had existed tertiary ulceration of the pharynx, resulting in a contraction opposite the base of the tongue, so that the opening would not admit anything greater than a No. 12 catheter. It was surrounded by a dense cicatrix, and the epiglottis had disappeared. The bands were divided by scissors, but dilatation was still required. The same author showed a case of symmetrical intermittent parotitis with xerostoma. This had existed for five years, with intermittent parotitis every three or four weeks for the last two years. The mouth had been dry at the time of the menopause, both at the tongue and on the mucous membrane of the cheeks. No teeth left. There was no blockage of Steno's duct, as saliva flowed from each. The submaxillary glands had now become enlarged.

Wm. Robertson.

Rosenbaum (Berlin).—*Total Extirpation of the Epiglottis, and some Remarks on Pharyngotomia Subhyoidea*. "Langenbeck's Archiv," Band 49, Heft 4.
COMPARE the report of the meeting of the Freie Vereinigung der Chirurgie Berlins, June 11, 1894. *Michael*.

Jeremitsch (Moskau).—*Pharyngotomia Subhyoidea (proprie sic dicta)*. "Langenbeck's Archiv," Band 49, Heft 4.

IN order to commit suicide, a soldier, thirty-four years old, cut his throat. The wound was twelve centimètres long, situated over the hyoid bone. The epiglottis prolapsed. No great vessel was wounded. The author united the wound by suture without prophylactic tracheotomy. Recovery took place in a short time. The after-treatment only consisted in rectal feeding. Such cases are of greatest interest, because they show the value of this operation for surgical purposes.

Michael.

Braun (Breslau).—*Contribution to Resection of the Pharynx*. "Langenbeck's Archiv," Band 49, Heft 4.

TWO cases of malignant neoplasm treated with good result by resection of the pharynx. The details are more of surgical interest. *Michael*.

Courmont.—*Attacks of Pharyngeal Spasms in Tabes*. "Revue de Méd.," Sept., 1894.

A MAN, aged sixty-two years, with characteristic symptoms of tabes, greatly improved by suspension. The pharyngeal spasm came suddenly, and on entrance into the hospital the patient had not taken food for three days. A drop of water provoked an intense spasm, with suffocation, but without laryngeal crisis. No hysteria; no laryngeal spasm; no stenosis of the œsophagus. The spasms disappeared immediately after suspension, and the patient could be nourished. No return later on. Dr. Courmont believes the spasms of the pharynx are influenced by central or peripheral lesions. He relates the previous cases of Jean, Oppenheim, etc. *A. Cartaz*.

Magnan, A.—*Pharyngeal Symptoms in Tabes*. Thèse de Lyon, 1894.

AN excellent review of that special form of visual troubles in tabes, drawn up from fifteen cases. The pharyngeal symptoms are divided into sensorial disturbances (anæsthesia, paræsthesia or hyperæsthesia) and motor troubles (paralysis or spasm with contraction). Frequently these pharyngeal troubles are associated with laryngeal or ocular symptoms. The author believes suspension the best means of treatment for these troubles. *A. Cartaz*.

Ritter (Kiel). — *Contribution to the Knowledge of Œsophageal Diverticula*. "Deutsche Archiv für Klin. Med.," Band 55, p. 173.

PATHOLOGICO-ANATOMICAL description of five specimens of traction diverticula of the Kieler pathologico-anatomical collection. The author concludes a traction diverticulum may become secondarily a pulsating diverticulum by purulent lymphadenitis and mediastinitis. Traction diverticula sometimes are the outcome of cancers. *Michael*.

Zeuker, Konrad (Erlangen).—*Contribution to Etiology and Casuistics of Tuberculosis of the Œsophagus*. "Deutsche Archiv für Klin. Med.," Band 55, p. 405.

(A) *Etiology*.—Report on five cases collected from literature, with the conclusion that tubercles of the œsophagus are produced by infection and inoculation of swallowed tuberculous material.

(B) *Casuistics*.—1. A patient, thirty-eight years of age, for many years affected with tuberculosis of the lungs and hæmorrhages, had for two months difficulties in swallowing. The laryngoscope showed nothing abnormal. By introduction of a probe an impermeable stricture in the upper part of the œsophagus was found. Exact examination was impossible, owing to recurring lung hæmorrhages. Some weeks later, *exitus lethalis*. The *post-mortem* examination showed tuberculous stricture of the œsophagus.

2. In the *post-mortem* examination of a patient who died from pulmonary and laryngeal tuberculosis, in the region of the bifurcation in the œsophagus a tuberculous ulcer was found.

3. A patient, forty-six years of age, died with the symptoms of universal tuberculosis. The *post-mortem* examination showed a perforating tuberculous ulcer between the trachea and œsophagus.

Michael.

LARYNX, &c.

Oertel (München).—*New Laryngo-Stroboscopic Examination*. "Münchener Med. Woch.," 1895, No. 11.

THE author as early as the year 1878 proposed to introduce a stroboscope into the laryngeal examination of singers as well as in cases of disturbance of the singing voice. He describes the different results obtainable by this method, which makes it possible to observe the undulations of the vocal cords. He concludes that by this combined method the results of laryngoscopic examination are completed, and that it must be regarded as an integral part of the study of the larynx.

Michael.

Baurowicz (Krakau).—*Scleroma Laryngis sub forma Sclerosis Inter-Arytenoidea*. "Wiener Med. Woch.," 1895, No. 6.

SEE the report on the laryngoscopical section of the sixty-sixth Naturforscher Versammlung in Wien.

Michael.

Luese (Schonfliess).—*On Laryngeal Papillomata in Children*. Inaugural Dissertation, Berlin, 1894.

THE author's statistics prove that the endo-laryngeal method of operation should be preferred if possible.

Michael.

Wherry (Cambridge).—*Laryngeal Growths removed by Operation*. "Brit. Med. Journ.," Mar. 9, 1895.

THESE occurred in a lad who suffered from aphonia and dyspnoea. Papillary growths obscured the vocal cords. A preliminary tracheotomy was performed, and, after a few days, the larynx was opened by median section of the thyroid cartilage. A large quantity of papillomatous growth was removed from the interior of the larynx and from the region of the false cords. No after application was needed.

Wm. Robertson.

Tschlenow (Moskau).—*On a Case of Circumscribed Gummatous Non-Ulcerated Tumour of the Larynx*. "Weiner Med. Woch.," 1895, No. 13.

THE tumour was the size of a nut on the left arytenoid cartilage. The diagnosis was made by means of a complicating specific ulceration of the pharynx. Cure under specific treatment.

Michael.

Panzer (Wien).—*On Tuberculous Polypi of the Vocal Cords.* "Wiener Med. Woch.," Nos. 3, 4, and 5.

RECENTLY seven cases of true tuberculous polypi were described by Lermoyez, Kidd, Mackenzie, Schafer, and Avellis. The author relates some cases of his own experience.

1. A patient, twenty-nine years old, affected for some months with hoarseness. The laryngoscope showed a polypus the size of a pea on the left vocal band. Extirpation. The microscopical examination showed the usual hypertrophy. Some months later recurrence. Extirpation. In the lungs no sure signs of tuberculosis. The microscopical examination of the extirpated mass showed characteristic giant cells and tuberculous tissue. At present, two years later, no recurrence.

2. A patient, sixty years old, for some months hoarse. Polypus the size of a pea in the anterior commissure. Extirpation. The microscope showed giant cells and caseous portions characteristic of tuberculosis.

3. A patient, thirty-five years old, with a polypus in the anterior commissure. Extirpation. The microscope showed characteristic miliary tubercles in the neoplasm.

The author concludes that all polypi should be examined histologically, because only by this examination is it possible to recognize the tuberculous tumours; and that extirpation is the best treatment for these neoplasms. *Michael.*

Schliess (Stettin).—*Method for Removing Fish Bones, etc., from the Larynx.* "Therap. Monats.," 1894, No. 2.

THE bony foreign bodies should be touched with two per cent. hydrochloric acid or acetic acid if they are in the larynx. If they are in the œsophagus or the stomach, acids (vinegar) should be swallowed. In this manner it will be possible to decalcify them, and so to diminish their dangers. *Michael.*

Arnison (Newcastle-on-Tyne).—*A Case of Cut Throat involving the Larynx treated by Suturing, with complete primary union.* "Lancet," Feb. 2, 1895.

THE thyroid cartilage was completely severed just below the pomum adami, bringing into view the interior of the larynx. The parts were carefully sutured together with catgut sutures. Primary union was found to have taken place in seven days. *Dundas Grant (St. George Reid).*

Harris, T. J.—*Fracture of the Larynx, and Report of Case.* "Med. News," Feb. 23, 1895.

THE author has collected and tabulated thirty cases of fracture of the larynx since 1881. In the author's case the fracture, which was seen some months after the accident, occurred whilst playing a wind instrument; the symptoms were sudden pain in the right side of the neck, and swelling extending to the right ear, loss of voice, and dysphagia, also pliability of the bones in the neck. Subsequent double otorrhœa, and persistent cough and headache, chiefly occipital, dyspnœa and inability to swallow solids, with occasional laryngeal pain. The thyroid is excessively mobile, pomum adami indistinct; pain on manipulation, and crepitus is obtained at the upper part of the right ala. The laryngoscope revealed nothing further. *Lake.*

Joel (Gotha).—*Case of Laryngeal Fracture.* "Münchener Med. Woch.," 1895, No. 13.

A PATIENT, thirty years old, was struck by the hoof of a horse in the laryngeal region. There was a wound in the region of the chin, orthopnœa and bloody

secretion with painful cough and aphonia. Palpation showed crepitation in the laryngeal region. The laryngoscopic examination revealed inflammation of the right ventricular band and great œdema over the right arytenoid cartilage. The right side was immobile. A green foreign body seemed to be present in the subglottic space. Tracheotomy was performed with removal of some pieces of the fractured cricoid cartilage. Three weeks later the canula could be removed. The laryngoscope showed, four weeks (and also one and three-quarter years) later, phonation of the right arytenoid cartilage, swelling of the ventricular band and immobility of the right side. The left vocal band passed the middle line. The voice was rough and loud. *Michael.*

Jones, W. S.—*Prolapse of the Laryngeal Ventricle.* "Med. News," Feb. 2, 1895.
REPORT of a case. The treatment adopted was electro-cantery. *Lake.*

Meslay.—*Croup, Intubation and Tracheotomy.* Soc. Anat. Paris, Feb. 15, 1895.

A GIRL, three years of age, with diphtheritic laryngitis (associated diphtheria with streptococcus). Intubation during five days. In the afternoon, recurrence of dyspnoea, fresh intubation. Five times the tube was removed and replaced, and cure of the diphtheria resulted. Eight days after leaving the hospital the girl was readmitted, on account of laryngeal spasms with dyspnoea due to bronchial adenopathy with compression of the recurrent nerves. Intubation was tried but the relief was not prolonged and the tube was rejected many times. In all intubation was practised twelve times. The asphyxia increasing, tracheotomy gave permanent and quiet respiration. After ten days the canula was removed, but the child was depressed, and died five months after the occurrence of diphtheria.

At the necropsy there were found ulcerations of the trachea, purulent mediastinitis, tracheo-bronchial adenopathy with compression of recurrences, pulmonary tuberculosis. *A. Cartaz.*

Konigsberger.—*Intubation in Laryngeal Stenoses.* Inaugural Dissertation. Würzburg, 1894.

REVIEW. *Michael.*

Lehmann (Dresden).—*Tracheotomy in Two Stages; Better Intubation in Severe Decanulment.* "Langenbeck's Archiv," Band 49, Heft 4.

IN a child one year old superior tracheotomy was performed because of diphtheria. As the canula could not be removed on account of granulations, the author performed inferior tracheotomy, followed by intubation. The case was cured. The author performed the second tracheotomy in such a manner that the first day the skin and cellular tissue was cut, and on the next day the trachea itself. The author believes that he has invented this tracheotomy in two stages. This method was described sixty years ago, but has been only rarely performed, because tracheotomy is usually done on account of a vital indication.

Michael.

Parkhill, C.—*A New Method of Closing a Laryngeal Fistula.* "Internat. Med. Mag.," Feb., 1895.

IN this case a determined effort had been made to commit suicide. The patient had, however, recovered, a laryngeal fistula remaining. The first step in the operation consisted in completely denuding the margin of the fistula. An incision, which outlined a tongue-shaped flap, was made, extending down to the supra-

sternal notch. This flap had a width slightly greater than the denuded fistula. The flap was then dissected upwards from its tip until within half an inch of the lower margin of the opening. It was then turned upward upon itself and stitched in position with catgut sutures to cover the fistula. The tissues upon either side of the larynx and of the wound left by the removal of the flap were dissected up, and by gliding them toward each other were sutured together. The patient made a complete recovery, and very slight, if any, change seemed to have taken place in his voice.

W. Milligan.

Phillips, W. C.—*Thyrotomy for Removal of Multiple Papilloma of the Larynx.* "Annals Ophth. and Otol.," Jan., 1895.

PATIENT, aged eleven. After some previous removals by the mouth a thyrotomy was performed, after a preliminary tracheotomy; the growths were subglottic, as well as on the vocal bands and ventricles. The wound was sewn up, and complete recovery ensued, with no recurrence. Breathing was seriously obstructed before the operation.

Lake.

NECK, &c.

Gronner (Zurich). — *On Treatment with Thyroid Gland.* "Corresbl. für Schweizer Aerzte," 1895, No. 5.

IN one case of Basedow's disease treated by pills of extract of the thyroid gland a severe urticaria arose. Such an event has not yet been described in literature.

Michael.

Godlee (London).—*Cystic Hygroma of the Neck.* "Brit. Med. Journ.," Feb. 16, 1895.

THIS occurred in a man, aged forty-one, who suffered from a large swelling of the neck, side of the face and sublingual region, which occasionally became acutely inflamed and threatened suffocation. Part was solid, but the greater part was composed of various sized cysts, some of which projected into the floor of the mouth. Some of the larger of the cysts were removed through the mouth. The structure was thought to be cystic hygroma combined with œnoid structure.

Wm. Robertson.

Dennig (Tübingen). — *Influence of the Thyroid Gland Treatment on the Secretions.* "Münchener Med. Woch.," 1895, No. 17.

THE author used thyroid tablets for a longer time, and acquired mellituria. He believes, therefore, that this treatment must be used with great precaution.

Michael.

Owen, D. (Manchester). — *Further Notes on the Treatment of a Case of Exophthalmic Goitre.* "Brit. Med. Journ.," Feb. 16, 1895.

IN the case referred to, the patient by accident, instead of being fed on thyroid which was prescribed, took freely of the thymus, and with great benefit to the symptoms. Discontinuance of the thymus was followed by return of symptoms. The thymus was afterwards resumed with great benefit. Pulse at first, 120; after thymus feeding, 72. Eye symptoms had disappeared. Thyroid swelling no longer present. One lobe of the thymus (cervical portion) has been taken three or four times a week; sometimes only one lobe a week. It is thought that there may be oppositeness in action between the thyroid and the thymus, the latter being

supposed to prevent emaciation. The pancreas inhibits the formation of sugar in the liver. It may be that the thymus inhibits the action of the thyroid.

Wm. Robertson.

Baldwin, W. W. (Florence).—*Graves' Disease succeeded by Thyroid Atrophy.*

"*Lancet*," Jan. 19, 1895.

IN the first case, that of a boy, the symptoms first appeared at the age of six. Breathlessness, palpitation, swelling of the neck, and prominence of the eyes, face broad and flattened, hands puffy. Dieting, and treatment with iron and arsenic failed to give relief, but under thyroid gland powder, five grains four times a day, he made rapid improvement.

In the second case, that of a school-girl, aged thirteen years, Graves' disease succeeded an attack of follicular tonsillitis, and was followed after seven years with true myxœdema. Treatment by fresh thyroid gland rapidly relieved the symptoms.

In the third case, also of a school-girl, aged sixteen, with irregular menstruation and neurotic family history, Graves' disease was followed in six years by symptoms of myxœdema, sluggish circulation, mental hebetude, and intolerance of cold. Five grain thyroid tablets, three times a day, gave satisfaction from the first.

In the fourth case, that of a woman, aged forty-four years, Graves' disease followed severe mental shock. The symptoms gradually disappeared, to be succeeded in a few months by loss of voice, swelling of the hands and cheeks, melancholia, etc. Although no absolute atrophy of the thyroid could be made out, she rapidly improved on thyroid gland powder given in tablets. In all these cases one or two tablets have continued to be taken daily.

Morris, H. (London).—*Two Cases of Operation for Cystic Bronchocele.* "*Lancet*,"

Jan. 5, 1895.

THE first case was one of multiple adenomata of the thyroid; seventeen cysts were removed by enucleation. An incision was made near the middle line, parallel with the border of the right sterno-mastoid. The largest tumour measured two inches by one inch, and was partly calcified. The drainage tube was kept in for thirty-six hours, and the patient made an uninterrupted recovery in eighteen days. Six months after leaving hospital she was readmitted for the purpose of having the cysts connected with the left lobe removed. Her health had improved since the previous operation. The incision was made over the left lobe, nearly parallel with the edge of the left sterno-mastoid, and four cysts were removed. She made an uninterrupted recovery in thirteen days.

The second case was one of large cystic bronchocele, the tumour being about the size of a large lemon, situated to the left of the median line. A vertical incision, three and a half inches long, was made in the middle line of the neck, extending to within half an inch of the sternum. The tumour, which was completely invested by the thyroid capsule and gland tissue, was enucleated by means of a blunt raspatory and the finger-nail. Three days after the operation there was a slight rise of temperature, 101° to 102° F., but after the wound had been washed out, the temperature fell, and she was discharged cured in thirty-three days.

Attention is drawn to the advantages of the treatment by incision, especially in cases of multiple tumours; and to the advantage in the second case, cited above, of dissecting directly down to the cyst capsule before attempting removal.

Henle (Breslau).—*Echinococcus of the Thyroid Gland.* "*Langenbeck's Archiv*,"

Band 49, Heft 4.

THE author reports twenty cases of this rare event from literature (three of them are dubious), and adds one case of his own observation. A patient, eighteen years

old, had since her ninth year a swelling of the left side of her neck. During the last two months the swelling increased to the size of an egg. The skin over the tumour was reddened. The tumour gives the feeling of fluctuation. The left vocal band was paralysed. The diagnosis was struma cystica. On incision there was a discharge of purulent fluid and a quantity of greenish translucent membranes. Extirpation of the wall of the cyst was followed by cure; but the paralysis of the left vocal band persisted. The examination of the discharged membranes showed that it was echinococcus. The author concludes that a differential diagnosis between cystic struma and echinococcus cannot be made by outward examination. It is only by puncture that it is possible to differentiate them. *Michael.*

Escherich (Graz).—*Case of Infantile Myxedema.* Verein der Aerzte in Steiermark, Meeting, Oct., 1894.

A CHILD, seven years old, who was healthy in the first years of her life, had no disease but whooping cough. The intellectual development was very slow, and she began to speak only in her fourth year. The child was very short, but very thick, especially about the eyelids. The panniculus adiposus was very strong over the whole body. She had the intellect of a child of four. No perspiration occurred at all, and there was very little hair on the head. Diagnosis was made of myxedema, and feeding with strumous gland produced improvement. *Michael.*

Gowan, Campbell (Great Stanmore).—*Myxedema and its Relation to Graves' Disease.* "Lancet," Feb., 23, 1895.

THE author refers to the history of the disease, and gives the characteristic symptoms at length, pointing out their similarity to those following total extirpation of the thyroid gland. Two cases are quoted where Graves' disease was followed within three years by myxedema. The author believes myxedema may be looked upon as a possible or even a probable result of Graves' disease. In all the cases treatment with the thyroid extract proved most satisfactory.

Dundas Grant (St. George Reid).

EARS.

Grove, H. N. (Birmingham).—*An Artificial Ear.* "Lancet," Feb. 2, 1895.

THIS was applied in a case of epithelioma of the auricle, which had been removed. It was formed of vulcanite and aluminium, and was fastened on by means of a saturated solution of mastic in absolute alcohol.

Dundas Grant (St. George Reid).

Smith, J. MacCuen.—*Furunculosis of the External Auditory Canal.* "Med. News," Jan. 19, 1895.

AN exhaustive article on the above subject. The author recommends camphor phenol as an antiseptic, and points out the public phonograph as a fruitful source of infection. *Lake.*

Park, J. W.—*A new and more convenient Instrument than the Politzer Air-Bag for Inflating the Middle Ear.* "Annals Ophth. and Otol.," Jan., 1895.

THIS consists of a conical nose-piece, which is attached to the air-tank. It is capable of overcoming greater resistance, is very easily regulated, admits of no escape of air, and it is cheap—these are the points in its favour adduced by its inventor. *Lake.*

Alderton, H. A.—*The Influence of Affections of the Upper Air Tract upon the Ear.* "Annals Ophth. and Otol.," Jan., 1895.

THE author analyzes about 500 cases of aural disease, and finds. after giving the exact numbers, the following results (here given as positive, negative, and doubtful) as to the influence of disease of the upper air tract on the ear:—

	Positive.	Doubtful.	Negative.
Cerumen	40 % (?) ...	66 % ...	33 %
Acute otitis externa.....	16 % ...	— ...	—
Total obstruction	88 % ...	10 % ...	2 %
Subacute otitis media	58 % ...	26 % ...	16 %
Acute otitis media	81 % ...	10 % ...	6 %
Acute purulent otitis	50 % ...	21 % ...	29 %
Otitis purulenta recurrens	60 % ...	— ...	—

Contagious Diseases—

Chronic otitis media pur.	35 % ...	24 % ...	30 %
Otitis media pur. residuosa.....	42 % ...	29 % ...	29 %
Otitis media catarrh. chronica.....	57 % ...	25 % ...	18 %
Otitis interna and media	36 % ...	38 % ...	26 %
Otitis interna	14 % ...	— ...	25 %

Doubtful is sometimes used as partly.

Lake.

Gradenigo (Turin).—*On Monaural Diplacusis.* "Arch. of Otol.," Vol. XXIII., No. 4.

MONAURAL diplacusis is rare, and is usually harmonic, that is to say, the false tone is separated by a definite harmonious interval from the true, and is in fact one of its overtones, abnormally audible. In a case described it was more distinct as the tone of the tuning-fork with which it was tested became weaker. The phenomenon was perceived by bone- as well as air-conduction, and was due to middle-ear catarrh.

Binaural diplacusis is also sometimes harmonic, and due to catarrh or other abnormality of one middle ear. It is, however, occasionally disharmonic, the false tone being perceived about one-half or one-third tone higher or lower than the true, owing to an affection of the internal ear.

Dundas Grant.

Daae, Hans (Christiania).—*On Double Hearing.* "Arch. of Otol.," Vol. XXIII., No. 4.

THE writer has a difficulty in ascribing harmonic diplacusis to disease of the internal, and disharmonic to that of the middle ear absolutely. He quotes a case of diplacusis in which the interval between the sounds heard by the two ears respectively was not harmonic, that is to say, the false note was not a harmonic (over-tone) of the true, and in which the symptom disappeared under treatment adapted exclusively to middle-ear disease. He allows that if in a given case the symptoms indicate a middle-ear affection, and double hearing is present for air-conduction but not for bone-conduction, the double hearing may be attributed to an affection of the sound-conducting apparatus. [This paper is of great interest when compared with that of Gradenigo. The discrepancy might perhaps be explained by the possible co-existence of an affection of the internal ear in Daae's case, a condition very difficult to eliminate by tuning-fork or other tests.—D.G.]

Dundas Grant.

Zwaardemaker, H. (Utrecht).—*Hearing for Speech and Hearing for Tones in General and the Measurement of the latter by Gradenigo's Auditory Field.* "Arch. of Otol.," Vol. XXIII., No. 4.

DIMINUTION of hearing for tones must naturally carry with it diminution of hearing for speech. Hearing for speech is measured by Oscar Wolf's method, noting the

distance a whisper is heard as a numerator, and taking as denominator the distance at which the same word is heard by the normal ear. The accepted normal distance of seventeen metres for whispering is considered by the author as really a maximum far above what is required for ordinary hearing. The estimation of hearing for tones is effected by means of tuning-forks extending over a great range— $C-^2$, $C-^1$, C , C^1 , C^2 , C^3 , C^4 , C^5 , C^6 —practically there must be tested the lowest boundary tone, the hearing power for C , C^2 , and F^4 , and the upper boundary tone. This can be plotted out on a chart divided into semitones along its base line (abscissa), and into amount (percentage) of hearing power, as compared with the normal on the co-ordinates. By joining these points (which may be further multiplied) a picture of the "field of audition" can be obtained, and the superficial extent of this can be taken as a basis of comparison at different ages and in different diseases of the organs of hearing. It can also be compared with the hearing for speech. In sclerosis hearing for speech is usually less than for tones. *Dundas Grant.*

Highet (Singapore).—*Otomycosis*. "Brit. Med. Journ.," Mar. 9, 1895.

THE author thought this the most frequent affection of the external meatus in Singapore, and was met with oftener than in Europe. It is usually caused by diffuse inflammation of the meatal walls, perforation, and chronic middle-ear discharge. The treatment adopted was cleansing the meatus and soaking the parts with a solution of sublimate in spirits of wine. *Wm. Robertson.*

Galloway (Singapore).—*Ménière's Disease*. "Brit. Med. Journ.," Mar. 9, 1895.

THE patient, aged sixty, was seized with buzzing in the left ear, giddiness, and, later, vomiting. These attacks occurred three or four times a week. In them she was pale, perspiring, and with eyes cold. The room seemed rushing towards her left side. No unconsciousness. K. Br. and K I did good. During the attacks there was hæmianopsia. In the discussion Dr. Highet (Singapore) referred to a case reported by Gowers, in which air and bone-conduction were good, but where Galton's whistle was found inaudible on one side, showing some damage to nerve endings. *Wm. Robertson.*

Bonnier.—*The Normal Tension of the Labyrinthine and Cerebro-Spinal Glands*. "Med. Week," Jan. 4, 1895.

THE endyma-ventricular, subarachnoid, and perilymphatic receptacles being in communication, the tension is uniform in these. Moreover, the flat form of Reissner's membrane on the one hand, and the necessity of insuring complete inertia of the membrane of the ear on the other hand, tend to prove that under normal conditions the endolymph balances the perilymph. The tension is therefore uniform in all the four receptacles, variations in any one of them involving the rest. This tension must also balance the exterior pressure and vary with the latter. The labyrinth is protected against the injurious influence of changes in the air pressure by the inhibitory apparatus of Weber. The external pressure is counterbalanced behind the tympanic membrane by the tubo-tympanic manœuvre. Labyrinthine and cerebro-spinal regulation is effected by a vaso-motor reflex of labyrinthine origin. *Wm. Robertson.*

Lake, R. (London).—*Abnormality in Course of Chorda Tympani*. "Lancet," Jan. 5, 1895.

AN interesting abnormality, the chorda passing across the membrane to the lower fourth of the manubrium, visible through the membrane; the nerve then turning upwards and making its exit beneath the tendon of the tensor, through the canal of Huguier.

Koerner, O.—*Tuberculosis of the Temporal Bone; Extension of the Tubercular Inflammation to the Base of the Temporo-Sphenoidal Lobe.*

THE patient, a Chinese, eighteen years of age, was attacked with acute otitis, which required the mastoid to be opened two months later, when a large cavity was found in the bone. In the ensuing twelve months five operations were undertaken; bone (sequestra) and granulations were removed. Two years after the original attack cough supervened, both apices of the lungs were involved, and he rapidly sank. At the *post-mortem* the temporal bone, where not destroyed, was invaded, and tubercles spread over the brain for some distance; the lateral and petrosal sinuses were thrombosed, and the jugular converted into an abscess in the neck.

Lake.

Schirmunsky, M. (St. Petersburg.)—*Pilocarpin in Diseases of the Middle Ear and Labyrinth.* "Monats. für Ohrenheilk.," Feb. 1895.

AFTER a short account of the literature of the subject the author gives his own experience of this treatment of middle-ear and labyrinthine disease. For dry middle-ear catarrh he employed subcutaneous injections of pilocarpin on two patients, but neither in one nor the other was any marked improvement in hearing made out. Direct injections of pilocarpin into the tympanum were carried out in more than twenty-five patients, but with no better results than what he obtained in similar cases by the ordinary injections of solutions of caustic potash or soda, bicarbonate of soda, etc. Subcutaneous injections were employed in four cases of secondary disease of the labyrinth. One was a deaf mute who had lost the hearing power after scarlet fever. Bone conduction was partially preserved, as well as hearing for noises and musical tones, and, now and then, words. Pilocarpin had no beneficial effect whatever. In the other three cases no benefit was obtained. In recent affections of the labyrinth the effect was quite different, and improvement was obtained in two cases; one of traumatic effusion into the labyrinth, and the other from syphilis. He comes to the following conclusions: "First, it is only in recent affections of the labyrinth from whatever cause they arise (syphilitic, traumatic, or secondary) that we can expect beneficial results from subcutaneous injections of pilocarpin, and this is the more certain the earlier the treatment is commenced. Second, no good is effected by pilocarpin either by subcutaneous injections or by the introduction of pilocarpin into the tympanum in old-standing affections of the labyrinth, and in the so-called dry middle-ear catarrh, where persistent changes have taken place."

[We cannot but think that these conclusions are those at which otologists in general have now arrived.—ED.]

Dundas Grant.

Isaia.—*Formulae for the Treatment of Chronic Otorrhœa in Scrofulous Patients.*

"Med. Week," Dec. 7, 1894.

R. Peruvian balsam }āā ʒiiss.
 Alcohol }
 Hydrochlorate of cocainegr. 9—15.

For external use.

R. Bals. Peruv. }āā ʒss.
 „ Tolu }
 Alcoholʒi.—ʒij.
 Cocaine hyd.gr. 15—30.

For external use.

The meatus and ear are cleansed and anæsthetized with cocaine, and the drops instilled or inserted on cotton-wool. If excoriations are present in the meatus, irritation is apt to arise.

Wm. Robertson.

Kutscher (Giessen).—*On the Etiology of an Otitis Media following Pharyngeal Diphtheria.* "Deutsche Med. Woch.," 1895, No. 10.

IN the aural pus the author found true Loeffler bacilli, which he looks upon as the cause of the otorrhœa. Michael.

Gradenigo (Turin).—*The Rational Treatment of Acute Otitis Media.* "Med. Week," Feb. 9, 1895.

THIS treatment is described as "rational" because it excludes many routine measures which are injurious (cotton swabs, air douches, etc.). If the patient is seen at the onset of the otitis, then rest in bed, light diet, gargling, and a few drops of—

R. Carbolic acid $\frac{3}{4}$ to 1 gramme
Sod. chlor. 4 grammes
Aq. destil. 50 grammes

slightly warmed. The salt prevents maceration of the epidermis. Gentle irrigation of the nasal cavities can be employed. If this does not abort the attack, and if pain continues or pus forms, then after disinfecting the meatus with sublimate solution, and anæsthetizing with cocaine, paracentesis of the membrana tympana is performed without any other form of interference as air douching, etc. A second incision may be called for. Drainage is secured by a pledget of iodoform gauze, not pushed too far into the meatus, and covered externally by a few layers of the same gauze. Pain continuing, the mastoid may be suspected, and leeches applied over it may abort the mischief. If, after three or four weeks, the acute symptoms disappear without diminution of suppuration, bathe the ear with a 1-10,000 sublimate solution (warm). Wm. Robertson.

Galetti, V.—*On Some Cases of Purulent Otitis Media consequent on Plugging the Posterior Nares, and on the Means which may be Employed in lieu of Plugging.* "Archiv. Ital. di Otol.," Vol. III., 1895.

A RECORD of four cases where the use of Belloc's sound was followed by purulent otitis media, one of the cases ending fatally. There is no statement of any anti-septic precautions having been used, and the tampons were kept in place for thirty-nine and even forty-seven hours. He concludes by agreeing with Gellé that a consideration of the possible auricular troubles should make us condemn this barbarous method, especially when we are possessed of so many reliable hæmostatic remedies. St. Clair Thomson.

Park, J. W.—*A Case of Acute Purulent Inflammation of the Middle Ear, with Two Attacks of Double Optic Neuritis; no Mastoid Complication; Two Operations and Recovery.* "Annals Ophth. and Otol.," Jan., 1895.

THE patient developed acute suppurative otitis (left), which, after lasting thirty-seven days, became complicated with vertigo, stiffness of neck muscles and tongue, dysphagia, slight left facial paralysis, pain in pharynx and impairment of taste, normal temperature and quick pulse, followed by delirium, and optic neuritis (double) three days later. Two days later the mastoid was drilled on account of continuance of symptoms and excessive pain. No pus was discovered, but a large quantity flowed out of the canal. Recovery was gradual. The patient then had attacks of pain, ending in chronic suppuration.

For the ensuing three months pain was constant and severe, and was followed by optic neuritis, subnormal temperature, and attacks of coma, profuse discharge and diplopia. The ear was now curetted; all contents, including the two large ossicles, were removed. Recovery was gradual, and now cure is complete. Left

ear, hearing distance watch contact, conversation three feet. The author then quotes numerous authorities on the subject of otitis and optic neuritis. *Lake.*

Collet, F. G.—*Auditory Disturbances in Tabes Dorsalis.* "La Presse Méd.," Jan. 12, 1895.

REFERENCE is made to the conclusions of Marie and Walton, Gellé, Strümpell, Oppenheim, Siemerling, and Haberman. The author's observations show an anatomical basis for the auditory troubles, viz., atrophy of the nucleus and nerve trunk. They are interesting as affecting the ganglion cells on the nerve, the labyrinth, and resemble histologically the other nerve lesions of tabes. In the middle ear the lesions are a sclerosis of the inner wall and the membrana tympani, except its centre. There are alterations of hearing and frequently subjective sounds. These latter are important in consideration of their bearing on hallucinations. The auditory disturbances may arise either in the sensory or the trophic nerve of the ear. The sclerosis of the middle ear, as well as the lesion in the fifth, which may possibly give rise to it, the affection of the auditory nerve, and the tabes, may all be a para-syphilitic affection.

St. Clair Thomson.

Moos, S. (Heidelberg).—*History of a Brain Tumour.* "Arch. of Otol.," Vol. XXIII., No. 4.

A MAN, aged twenty-one, gradually developed during a couple of months, after working in a cold store, unsteadiness of gait, to which was superadded left-sided deafness and diplopia (left-sided abducent paralysis). There was total deafness for speech in the left ear, but tuning-forks up to two hundred and fifty-six vibrations, and not higher, could be heard at a distance of a few centimètres. There was also left facial paralysis, pronounced nystagmus, slight anæsthesia of left half of face, staggering gait, cerebellar ataxy, particularly in the left leg, slight comparative feebleness of grasp of left hand, and increase of left tendon-reflex. A diagnosis of an affection of the cerebellum and medulla, probably a tumour (glioma), was made. Ophthalmoscopic examination at first negative, later doubtful, was not allowed at a subsequent stage. Death followed in about a month, and a glio-sarcomatous tumour was found in the left crus of the pons and the outer part of its left half, extending towards the medulla and into the left hemisphere of the cerebellum. The nuclei and root-fibres of the abducent, facial and auditory of the left side had entirely disappeared. There were some small hæmorrhages and degeneration in the labyrinth, depression of Reissner's membrane towards the ductus cochlearis, and convexity outwards of the membrane of the round window (attributed to increase of intra-cranial pressure). The facial and auditory were almost entirely destroyed by hæmorrhage. Nothnagel's opinion as to the great rarity of disturbances of hearing in cases of tumours of the pons is quoted. Bernhardt found them eight times in twenty-seven cases.

Dundas Grant.

REVIEWS.

Baginsky, Adolf (Berlin).—*Die Serumtherapie der Diphtherie nach den Beobachtungen im Kaiser und Kaiserin Friedrich Kinderkrankenhaus in Berlin.* (Serum-therapy in Diphtheria. Observations made in the Kaiser and Kaiserin Friedrich Kinder Hospital in Berlin.) Berlin: Hirschwald. 1895. 330 pages.

As the readers of this Journal will have remarked, the question of the value of serum-therapy in diphtheria has been the subject of the greater

part of all laryngological publications in Germany for some months. One of the most energetic propagators of this therapeutic means is the author of this work. He is also one of the first who applied it. It is not necessary to review here the whole contents of the book, because the views and the results of the author are referred to in the reports on his diverse papers read in the Berlin Medical Association, and in the Munich Congress for Internal Medicine. In the preface he says that he believes that this serum-therapy is, in his experience, one of the greatest inventions in therapeutics. That other physicians may be able to form a proper judgment, he gives a table of five hundred and twenty-two cases treated with serum. Such statistics have not yet been published on this subject, and the author merits our thanks because we have now a report of every case as well as if we had observed it ourselves. No ordinary physicians, and still less hospital physicians, can have such a number of cases. This work must be consulted by everyone who wishes to form an opinion as to the value of the serum treatment.

Michael.

Kuttner, Arthur (Berlin).—*Larynxœdem und submucose Laryngitis. Eine historisch kritische Studie.* (Laryngeal Œdema and Submucous Laryngitis: an Historical and Critical Study.) With one table, 82 pages. Berlin: Renner. 1895.

GREAT differences have always existed among authors since old times as to the signification of glottic œdema, so that Tobold proposed the reunion of all acute swellings of the laryngeal mucous membrane under this name. With great knowledge of literature the author reviews the history of the different views on this disease, the division into inflammatory and non-inflammatory in serous and purulent œdema, and primary and secondary œdema and its relation to pharyngeal erysipelas, the results of bacteriological examination and experiments on animals. He concludes that it is incompatible with the present standard of science to classify purulent processes with simple serous under the same name, and proposes the following nomenclature:—

(a) *Laryngitis submucosa acuta* is the name for diseases in which the submucosa is affected by inflammatory processes. Such may be of acute infectious nature, primary as laryngeal erysipelas, secondary as in acute infectious general diseases, or from non-infectious causes as traumata, foreign bodies, and chemical or thermic influences.

(b) *Laryngeal œdema* is the name for a disease in which the œdema of the larynx is the consequence of other local or general disease. Every active state of irritation here is excluded. Among etiological factors are diseases of the heart and kidneys, venous stagnation, universal anæmia, and hydremia and angio-neurotic processes.

The review of the literature contains three hundred and twenty-nine references. The table contains three figures, the normal mucous membrane, erysipelas of the larynx, and *œdema laryngis*.

For all those who wish to work on this subject the study of this interesting essay will be indispensable.

Michael.

SOCIETY MEETINGS.

Gesellschaft der Aertze in Zurich. Meeting, Feb. 9, 1895.

MÜLLER remarked, concerning the discussion on antitoxin treatment, that the mortality of diphtheria in private practice up to now was twelve per cent. ; of hospital practice, fifty per cent. *Michael.*

Gesellschaft der Aerzte in Wien. Meeting, April 21, 1895.

ALBRECHT showed a specimen of polypus of the œsophagus. The histological examination proved it to be a sarcoma. *Michael.*

Aerztlicher Verein in Munchen. Meeting, Dec. 19, 1894.

SCHECH gave a review on the advantages of *nasal respiration* and the damage produced by *mouth respiration*.

DISCUSSION.

GRUNWALD remarked that the well-known rachitic thorax is a product of mouth-breathing. The diaphragm works as an auxiliary muscle in such cases of insufficient respiration, and by its traction it deforms the thorax. *Michael.*

Aerztlicher Verein in Hamburg. Meeting, March 19, 1895.

DR. ZARNIKO showed a patient, twenty years old, whose trachea was quite filled with dry, greenish, thick secretion, exhaling a fœtid odour. The author does not believe that it is laryngitis sicca, but a true ozæna of the trachea. *Michael.*

Medizin Gesellschaft in Leipzig. Meeting, Jan. 15, 1895.

Discussion on the Paper read by Dr. SOLTMAN. (Compare the report in this Journal.)

SEIFFERT reports on thirteen *post-mortem* examinations of cases of diphtheria treated by antitoxin. In all cases extreme degeneration of the myocardium was observed. Such degenerations sometimes are observed in cases treated in other ways, so that a relation between the antitoxin and this degeneration is not yet proved, but at the same time the absolute harmlessness of the medicament is not yet certain.

FRIEDRICH believes it necessary that the influence of antitoxin in cases of mixed infections should be studied in animals.

BIRCH HIRSCHFELD also believes that the different questions concerning antitoxin can only be answered by experiments.

KOLLMANN believes that the often-described exanthemata are not caused by the antitoxines, but that every injection of animal serum produces such symptoms. *Michael.*

ASSOCIATION MEETINGS.

THE BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.

Twenty-first General Meeting, held April 19th, 1895.

President—Dr. W. McNEILL WHISTLER in the chair.

The minutes of the last meeting having been read and confirmed, the following gentlemen were elected Fellows of the Association:—

Dr. WILLIAM HILL,
Mr. J. SEFTON SEWILL.

Mr. LENNOX BROWNE. *A Note on the Bacteriology of Ozæna.*

Most of the Fellows are aware that Loewenberg has been for some years working to discover the specific micro-organism of ozæna, and, very much impressed by his recent article published in the "Annals of the Pasteur Institute"—Metchnikoff's department—I thought it would be interesting to have some cultures made, and bring them here to show you. The specimens almost entirely confirm all that Dr. Loewenberg has said on the matter. However, as that may not be familiar to all, and is in any case of sufficient interest to be worth the recalling, I will briefly give you the result of his most recent conclusions, with such one or two comments of confirmation or modification as these specimens have suggested.

In agreement with much that Loewenberg has written as to the micro-organism of atrophic rhinitis exhibiting ozæna, it is no part of my intention to go into the morbid anatomy and pathology of the disease, nor to describe the microscopic appearances of the mucous membrane in different stages of the morbid process, for this has already been done very fully in the volumes of Loewenberg, Bosworth, and others. It has received attention in the various editions of my systematic work, and has been very amply discussed and illustrated at meetings of this Association by Wingrave. To the first of these observers we are indebted for a description of a special and characteristic microbe constantly found in the nasal mucus of ozænic patients. Loewenberg makes a point of selecting for the purposes of cultures the mucous threads which he finds so often adhering to the nasal fossæ after expulsion of the main masses of crusts; but it does not seem that there is any marked difference in the cultures from either source, for such cultures appear to show that the organism can be found just as readily in the most recent mucous secretions as in the oldest ones or in the inspissated crusts, thus somewhat disproving Bosworth's suggestion that the crusts form a better culture ground than the fluid elements of the secretion.

The following is in brief Loewenberg's description of the organism :—

It is a coccus of unusually large size, arranged in pairs, these being often coupled together in chains.

Their shape is more cylindrical than most other diplococci, in which one generally sees some irregularity in outline, but these are in many cases constricted in the centre, in a similar manner to the pneumococcus of Friedlander.

The specimens before you show not only that these diplococci may be unencapsuled, but also confirm Loewenberg's later statement that others are frequently surrounded by a capsule which appears as a clear zone.

When stained with Ziehl's solution of carbolic fuchsin in alcohol the capsules are not affected, but with dahlia violet and acetic acid the capsules become tinted, and appear as a delicate halo round the cocci.

The tube cultures illustrate the observations of Loewenberg, that not only are the colonies abundant, but also that they present themselves under two different aspects—(1) small, round, yellowish colonies, which are compact and are confined to the substance of the gelatine; (2) larger, semi-translucent colonies of a white or milky-white appearance, which are raised above the surface of the medium rapidly coalescing, becoming irregular in outline when in contact, and becoming after a time more milky or light yellow in colour.

In one tube it will be seen that there is a crackling and fringed-like appearance, resembling the fronds of a fern. The colonies are soft and semi-liquid, but they do not liquefy gelatine, and, moreover, they are the only colonies which are constant in growth from the mucus of ozæna.

A curious statement is made by Loewenberg in his most recent paper on this subject, to the effect that the cultures of this organism made on gelatine possess a certain odour, but so far from giving forth the peculiar and horrible stench so distinctive of ozæna, the odours liberated from them are of an ethereal character, and have quite unexpectedly been found to be in the majority of cases agreeable. Loewenberg likens them to those of elder flower or of privet. When the microbe is sown on fresh meat, and is further incubated at high temperature, a disagreeable odour, rather of a putrefactive and ammoniacal character than of true ozæna, is manifested.

A definite statement is made by the same observer on a question which will at once suggest itself to us, namely, the relation of the ozæna of atrophic rhinitis, without necrosis, to that of tertiary syphilis of the nose, especially in regard to this organism.

We all recognize the natural odour—so to speak—in these two conditions as something quite different and distinct, and it is interesting to learn that neither the cultures nor the microscopic characters resemble one another in the two diseases. Certain differences are described between the cultures of the pneumococcus and those of the coccus of ozæna, into which we shall not enter now; further than to say that they are bacteriologically distinct.

When Loewenberg comes to relate the results of his experiments on animals, the proofs of the specific nature of his organism cannot be said to be conclusive. Mice inoculated with the microbe die, even under very

small doses, in sometimes less than twenty hours, but not of pneumonia. On the other hand, any attempts to reproduce the disease in animals have so far been entirely unsuccessful.

The cultures Nos. I. to VI. were made from the dry crust ; Nos. VII. and VIII. from fresh nasal mucus.

Mr. LENNOX BROWNE next exhibited a set of framed and beautifully executed *coloured drawings* from life, by himself, illustrative of the appearance of the throat in different forms of *diphtheria*, alongside of which were placed the *bacteriological micrograph* in each case. He contested the statement of the bacteriologist that diphtheria was impossible of diagnosis from its clinical aspects alone, and pointed out that although the resources of bacteriology were of the greatest value, there were not very infrequently remarkable discrepancies between the results of bacteriological investigation and clinical examination. The drawings represented cases of *true diphtheria* of the virulent type in which the characteristic bacillus was plentiful, of *complex diphtheria* in which that organism was associated with diplococci, and lastly of *pseudo-diphtheria* in which strepto- and staphylococci were the specific organisms. With reference to the drawing of a case in which œdema was present and which had been diagnosed as one of diphtheria by an expert, Mr. Browne observed that he had thought otherwise on account of that very symptom. Œdema of the uvula and faucial mucous membrane was so rare in true diphtheria as to constitute a diagnostic sign of high value. Another of the great marks of distinction between diphtheria and pseudo-diphtheria was the different character of the secretion. The throat of a diphtheritic patient was not as a rule clogged up with mucus, and in this respect offered a contrast to the throat of scarlatina. Diphtheria gave dry cultures to the bacteriologist ; it was a dry disease as observed in the throat. These drawings were destined to be hung up in the Central Throat Hospital.

The PRESIDENT: We are all extremely obliged to Mr. Lennox Browne for bringing these cases before us and for the beautiful drawings.

Dr. HILL: I think Mr. Lennox Browne made a little slip. He said that œdema was never met with in diphtheria cases. He evidently meant to say we do see an œdematous uvula in diphtheria. Of course, an œdematous uvula is one of the characteristics. If you see lacunæ and a very œdematous uvula, especially with a little streak about it, it is very likely to be diphtheria. As a matter of fact, œdema of the uvula, when you have diphtheria of the palate, is a common everyday occurrence.

Mr. LENNOX BROWNE: I am very sorry to differ with Dr. Hill, but that is just what I did *not* mean. I think by the light of bacteriology we now know that the organisms in an œdematous sore throat are much more likely to be streptococci or staphylococci than the bacilli of diphtheria. I have been seeing during the last five or six months hundreds of cases of diphtheria, and I have taken occasion to point out to those with whom I have seen them that œdema is often to be seen in pseudo-diphtheria cases, but not in those of true diphtheria. I would say further, that I have not seen œdema of the larynx in diphtheritic patients examined *post-mortem*.

A paper was read by Mr. R. LAKE, on *Remarks on Facial Paralysis in Recent Otitis Media; and on the Treatment of Acute Otitis when the Hearing Power is threatened.* (See JOURNAL, May, 1895).

Mr. DUNDAS GRANT : I should like to express my indebtedness, and I am sure the other members of this society are with me, to Mr. Lake for reading the first otological paper, and one of such very considerable interest.

My experience with regard to the occurrence of facial paralysis in connection with otitis media would certainly not lead me to call it a common complication, and I have been very much on the look-out for it ever since reading a very interesting paper by Gellé upon the subject some years ago, whose experience seems to have been more on a par with that of Mr. Lake, and I think that general physicians, when cases of facial paralysis are brought before their notice, are perhaps not so ready as they ought to be to attribute it to an inflammatory condition of the middle ear. Of course, the occurrence of Bell's paralysis is sufficient to account for disturbances of the hearing of various kinds. In several cases which I have met with in general practice, I was able to note that the patient had a distinct hyper-sensitiveness to sounds, due, no doubt, to the paralysis of the nerve supplying the stapedius muscle ; so that instead of having a deafness, we may actually have a hyper-sensitiveness, and this condition may possibly help to mask the catarrh of the middle ear. But there can be no doubt that the association is a more frequent one than general physicians are apt to allow, and I dare say that a great many of the cases do not come to a special hospital. Perhaps at St. Thomas's some of these facial paralysis cases, I mean those apart from very obvious inflammation of the middle ear, may have come first under the notice of an enlightened physician and then been transferred to the otological department, so that Mr. Lake's experience in that way might be quite easily understood to be very different from mine. I occasionally have cases sent to me at Welbeck Street, but they are usually chronic, and, of course, not considered in the paper at present before us.

With regard to the treatment of acute otitis media in very young patients and infants, I have really very seldom felt any necessity for resorting to extreme measures, as they seem under the simplest possible antiseptic treatment to get well, to a most astonishing extent. Possibly the shortness and relative width of the canal, possibly the greater width of the Eustachian tube, may account for it, but my experience is that these cases run a very satisfactory course as a rule, even under very unsatisfactory social and domestic circumstances. Mr. Lake has most properly dwelt upon the importance of not too great delay in opening the mastoid process in these cases, and I think it cannot be too well understood what a much more simple thing this is than operations upon the mastoid in chronic disease. Politzer has pointed out to us, with much emphasis, just recently, that in the acute cases it is usually the superficial cellular layer of the mastoid which is involved, and all that is required is the opening of the cortex of the mastoid, to allow you to get at the focus of the disease. It is not necessary in these cases to fish deeply for the antrum,

which of course even experts will find at times to be not at all a simple procedure, but before proceeding to the opening of the mastoid cell, I have had recourse to a plan which Politzer himself recommends very strongly, and which, in a case published by Mr. Lake himself, was very successful; that is, of washing out the tympanum (perforation having taken place) through the Eustachian tube. In one case under my care the symptoms were extremely severe; the fever was high; the patient had all the symptoms of a commencing meningitis, and I determined to open the mastoid when the recommendation of Politzer occurred to my memory. I washed out the tympanum through the Eustachian tube, with boracic solution, using for the purpose an intra-tympanic tube passed through the ordinary catheter. The fever came down, and the patient presented a different aspect altogether. In a few days, temperature went up again. I washed through the Eustachian tube, and again it came down. This occurred a third time, and after that the recovery was a rapid, continuous, and complete one. However, as I say, it is very different in chronic suppuration of the middle ear, where the superficial cells are often sclerosed, and the antrum itself is buried in a mass of bone which requires, in some cases, a long hour to chisel through. Otherwise my views are entirely in accordance with those of Mr. Lake, and I have to thank him for bringing the subject before us.

Dr. LAW: I should like to ask Mr. Lake if he can give us any statistics of the facial paralysis cases at Golden Square. I must say that my experience, both in hospital and private practice, is that I have not seen so many cases of facial paralysis as I should have expected. I think these affections are usually treated either by the general practitioner, or by the physician or surgeon, and I think it is quite possible that at St. Thomas's the cases may have been sent over from other clinics, and therefore probably the statistics of facial paralysis, say in six hundred cases at St. Thomas's, would show more instances than amongst a similar number at Golden Square, or in any special hospital.

In reference to the treatment, I would advise that, in acute cases, it should be non-irritative, and as far as possible complete rest with antiphlogistic remedies. I would also say in reference to the remarks passed by Dr. Matheson, that I have rarely met with any great difficulty in making incisions in the tympanic membrane, and I have also seen the membrane incised many times by other individuals, and have never found that they experienced much trouble in performing the operation. Certainly, in some cases, one only sees a drop of blood, but I think this is often because the incision has not been made large enough. A considerable quantity of muco-purulent secretion frequently escapes into the external auditory meatus.

Dr. FARQUHAR MATHESON: I consider Mr. Lake's paper a most valuable one. It treats upon a subject of the greatest importance, but I think if Mr. Lake were to inquire more intimately into the history of these cases, which he calls acute, he would find, as a rule, that they are almost always acute attacks upon a basis of old tympanic or mastoid disease. It is very rarely that one finds facial paralysis in a new case of tympanic disease—in fact, I do not think I have seen any. As to the

cause of the facial paralysis, I believe it is due to the formation of pus under the mastoid process pressing upon the facial nerve. I had a case not long ago, a very typical one, in a boy about ten or twelve years of age. He suffered much with headaches and fever; he had some tenderness over the mastoid bone, and my practice is in these cases, when there is a suspicion of mastoid implication, to make an incision of the mastoid process with the view afterwards, if necessary, to open the mastoid antrum. In this case, after passing the knife down well into the lower part of the mastoid process, I came upon matter which looked like pus, and as soon as that was removed the facial paralysis gradually disappeared.

Now, as to the treatment of these cases, I do think it is very rarely necessary to touch the mastoid bone in this form of paralysis or in chronic cases if appropriate treatment is adopted in the early stage. In facial paralysis, after acute otitis media, the great point is to keep the Eustachian tube patent, if possible, and to disinfect the cavity. It is a rather difficult matter to incise successfully the tympanic membrane under such conditions. I hear gentlemen speak of opening the membrane as but a slight procedure, but in practice, in a swollen membrane, when pus has already formed, it is a difficult matter to know when we actually perforate the membrane, and even when this is done it is seldom so satisfactory as desired. We simply observe the escape of a small drop of blood; rarely have I seen matter follow the opening of the membrane. In the early stage of facial paralysis, if suitable treatment be pursued, it is very rarely that opening the mastoid will be required.

I consider the paper a very interesting one, and thank Mr. Lake for bringing it forward.

MR. LAKE'S reply: I must thank Dr. Grant for his kind remarks, and also for drawing my attention to Gellé's paper, which had escaped my notice. I should not quite agree with Dr. Grant as to treatment. I must say I rather hold in favour of the treatment that I advocated here. I do not advocate opening the mastoid without due discrimination, but I said it was particularly indicated in cases of infectiveness, or profuse discharge. In the case referred to by Dr. Grant the condition was due to irritation more than to the effect of any ptomaine or leucomaine which was being absorbed by the patient. I do not quite agree with Dr. Matheson in all he said. I think that those cases which he referred to, in which there was pus at the bottom of the fossa, would be more frequently called Bezold's disease of the mastoid, and I think the paralysis is frequently due to the extension of inflammation through the perforation which is so very common in the horizontal portion of the Fallopian canal and which is lucidly alluded to in Dr. Law's translation of Grüber. About statistics, I quite agree with Dr. Law. I was quite astonished myself when I came to work this matter up. I had seen all these cases myself, and the history was very clear that they were instances of acute otitis, but I cannot say in the least whether they were sent from another clinic or not. I would also point out that the cases at St. Thomas's are of a distinctly different social position to those at Golden Square.

Dr. DUNDAS GRANT. *Case of Dysphonia with Paresis of Arytenoid Muscle.*

Miss A. C., aged thirty, head mistress of an elementary school, came under my care in March, 1894, complaining of hoarseness and almost complete loss of voice, worse after slight vocal efforts. This first set in definitely after an attack of "ulcerated throat" in October, 1893, but a year previous she lost her voice for a fortnight owing to an attack of influenza. On examination there was found slight congestion of the vocal cords, and incomplete approximation of the arytenoid cartilage, leaving a triangular opening behind the vocal processes during phonation. The vocal portions were fairly well apposed. There was a slight degree of tumidity of the mucous membrane in the inter-arytenoid space.

There were no evidences of tubercular disease and the family history suggested no direct tendency thereto. Her father and mother were alive. One paternal uncle and a cousin had died from consumption, and another cousin was believed to be suffering with that affection.

After faradization, along with the application of chloride of zinc, the voice at once recovered its strength and retained a fair degree of tone for about a week. This has occurred again and again after each visit to the hospital, and each time with greater effect as regards strength and duration up till the last visit, about three weeks ago, when the voice was lost after four days.

The patient has been exposed to considerable family trouble, and a decidedly neurotic element is derived from her mother. There is no morning sputum, so that indication and facility for the search of tubercle bacilli have not presented themselves. We are, however, prepared for this should occasion arise.

Mr. MAYO COLLIER: I have had the opportunity of seeing the case exhibited by Dr. Grant, and have done so with considerable interest. They are rare cases, and present a certain degree of trouble in the treatment. I had recently a case under my care, sent to me by Dr. Clayton, of Broadhurst Gardens, with symptoms much the same as those of Dr. Grant's case, though somewhat more exaggerated. There was complete paralysis of the arytenoid muscle, not only transverse, but oblique, and no attempt to adjust the vocal processes. These cases are apparently distressing, because no local application appears to do them any good, and one knows, after reading the history of other cases, that the prognosis is somewhat doubtful, and in many, after trying tonics and change at the seaside, the improvement is but slight. Her employer sent this girl down to Margate for some two or three months, the change resulting in very slight improvement. I had the advantage of the services of a gentleman who was skilled in electrical work, and he applied the continuous current daily to this patient, placing one electrode on the muscles involved and the other on the superior and inferior laryngeal nerves alternately. This treatment, continued every day for the space of a fortnight or three weeks, resulted in marked improvement, so far as the adjustment of the cord and the arytenoid cartilage was concerned, but there was very little improvement in the voice. She could phonate to some extent, but the phonation was not satisfactory. The girl, who

came to my house every day for a fortnight, got dissatisfied with the slow progress of her case, and I got dissatisfied with the gratitude of the patient, and so lost sight of her. I have very little doubt that a continuation of treatment for two or three months would have resulted in a complete cure. I heard subsequently that Dr. Clayton had taken the matter in hand, and that she was very much better. I should suggest that in this case faradization, not the interrupted current only, but the continuous current in combination, be applied up to ten milliamperes, and I should certainly expect marked improvement. Tonics are indicated, fresh air, absence from work, and correction of any concurrent disease associated with irregular menstruation or uterine affections.

Mr. G. STOKER: I am sure we are all very interested to hear Dr. Grant and Mr. Collier in reference to this case. I am sorry I do not quite agree with all that has been said. In the first place, I do not think these cases are so very rare. This is a case, I take it, of paralysis or, I am more inclined to believe, paresis of the arytenoid muscles. I have found them pretty common, both in hospital and private practice. I think that, in cases of chronic laryngitis of long duration, the muscle which is most often affected, and not uncommonly, is the arytenoid muscle. I was struck in that case with the peculiarity of the voice, which I thought was not altogether accounted for by the appearance presented, or the want of power which seemed to exist in the arytenoideus muscle; the voice appeared to partake more of the character which we are accustomed to call functional aphonia, that kind of aphonia which occurs in females, and the voice is under those circumstances much improved by the application of the faradaic current. I myself have found that certainly the most satisfactory treatment in these cases was the internal application of and painting the larynx and vocal cords with strong solution of chloride of zinc, thirty grains to the ounce—these are unsatisfactory cases; one may relieve the aphonia, or the dysphonia, but they are very apt to relapse. I hope that will not be so in Dr. Grant's patient.

The PRESIDENT: As regards the question of frequency of occurrence of these cases, my experience coincides with the views expressed by Mr. Stoker. Complete paralysis of the arytenoideus (limited to that muscle alone), and presenting the typical triangular space between the cords in phonation, I should say is, on the other hand, much more exceptional. These other cases of chronic aphonia, in which there is more general paresis, are, I think, not of infrequent occurrence. Varying as they do in their individual features and complications, I think there are no more interesting cases for our consideration. They are essentially of catarrhal origin. In this patient I find considerable congestion, and some swelling still over the arytenoid region. This is in striking contrast to the whiteness of the vocal cords; but there is paresis of the adductors, and the soft whispering voice of functional aphonia. This neurotic complication is apt to be met with. I have seen a good many such instances. In all of these cases we have to deal with those who are subjected to constant strain of their voice, often fatigued and more or less run down in health.

Rest of voice is admittedly of the first importance, together with local

treatment to reduce laryngeal congestion. In reference to faradization, I think that, so long as any congestion exists, the advantage to be derived from it is questionable, beneficial as it is at a later period.

Dr. DUNDAS GRANT'S reply : I am very glad to find that my case should have called forth such very interesting remarks, and I was all the more inclined to bring it before the Association on account of the interest that was taken in another, somewhat obscure, nervo-muscular case, that I brought before the Association at the last meeting, when reference was made to the sufferings in regard to the voice experienced by teachers in our schools. This is another teacher, and her experience would go to strengthen the call for public attention being drawn to the difficulties that school teachers undergo. I have not the slightest doubt that this paresis is more or less functional ; but it is very difficult to tell where the functional ends, and the paralytic begins. The improvement in the voice which takes place after simple faradization is so extremely remarkable that it can hardly be due to anything else. As regards the question of it arising in laryngitis, there is no doubt that the exciting cause was a catarrhal condition, but that is a very usual thing. Then, again, the neurotic element is very strongly marked, not merely in the individual, but in her family history.

I shall endeavour to carry out the treatment as recommended, which is, if I may say so, what I have already instituted, only more so. The difficulty I have is that this patient lives in the Midlands, and she is only able to come up at comparatively long intervals. It would be a question as to whether I am justified in recommending her to give up her position as a schoolmistress, and to come up to London and undergo continuous treatment, either at my own hands, or at some more skilled. Any future points in the history I should be glad to bring before the society, because it seems to me a most valuable thing to have repeated observations on the same case at different stages.

Mr. MAYO COLLIER : Mr. President and gentlemen, I have brought three cases up for your inspection to-day, more for the sake of consultation than for giving you an exposition on the nature of their diseases. I venture to say that they are interesting, and my opinion has been confirmed by Mr. Browne, who kindly examined them with me. The first is one where you simply see some elevation in the inter-arytenoid space, some thickening and œdema of the arytenoid cartilages, and some vascularization at the posterior aspect of the vocal cords. This has been going on for twelve months, and no treatment has produced any satisfactory result. The next case is not one of syphilis, but it is a case of a new growth of the pharynx of three months' standing--a very large new growth. The third case is one of dysphagia of two months' standing, and I should be glad of the opinion of the society on its probable cause.

In reference to the case of the old gentleman with the new growth of the pharynx, he is fifty-five years of age, a painter by trade, and he has noticed something wrong with his throat for about six months. He has slight difficulty in swallowing, but has smoked, taken food easily, and worked up to about six weeks ago. He presented himself at the hospital about a fortnight ago, complaining of sore throat. The question resolves

itself into, What is this? and the diagnosis lies between syphilis, sarcoma, and epithelioma. Now, with reference to syphilis, I have inquired into his history. There is no evidence of syphilis, there are no old traces of syphilis, nor is syphilis indicated in the appearance of the growth. I should distinctly give it as my opinion that it is not syphilitic. The next question is, Is it epithelioma? I should be inclined to say it is not, because there is no evidence of secondary growths, and there is a total absence of involvement of glands on each side. The patient is in good health, and the growth has not the hardness which one finds in epithelioma. I should say the balance of evidence was in favour of its being sarcomatous. Of course, no treatment is available. I could advise nothing at all, and the man must go from bad to worse. To remove that growth is simply out of the question.

Dr. LAW: I should like to ask Mr. Collier, as operative measures are out of the question, whether he has tried the injection of pyoktanin, and, if not, I would suggest the employment of this remedy. I have tried it in two cases, with slight improvement.

The PRESIDENT: (Mr. Mayo Collier's second case.) I do not think the appearance is specially characteristic of syphilis. I am inclined to look upon it as malignant; possibly sarcoma. It recalls to me another very interesting case brought before a former meeting by Mr. Collier, involving the same region, the nature of which was at the time obscure, and subsequently proved to be epithelioma. I am sure we shall feel much indebted to Mr. Collier if he would report further upon the present case.

Mr. MAYO COLLIER: The next case is that of a boy, aged nineteen years. For about three or four months he has noticed something the matter with his throat. He has been losing flesh for about twelve months, and not felt up to his work. He presented himself with hoarseness, slight impairment of voice, and posterior laryngitis. There was some swelling of his arytenoids, and there was some accumulation of mucus. I applied chloride of zinc, twenty grains to the ounce, for a time, and after about three months' treatment he got a little better. However, he presented himself again with increased hoarseness. There was then an elevation in the inter-arytenoid fold. Having applied astringents, and given tonics without effect, he simply relapsed month after month, and there is substantially no improvement; on the contrary, he is somewhat worse than when he originally came under my care. Now, under these circumstances, one thought it was not a case of ordinary laryngitis. There is no evidence of tubercle in the lung, and it is doubtful whether we have to deal with an ordinary case of laryngeal catarrh, or commencing laryngeal tuberculosis. The post-nasal catarrh improved with treatment. The improvement of the larynx has not been satisfactory, and I brought him here to-day to endeavour to obtain confirmation of my opinion. I suspected tubercle. This elevation of the arytenoid space, indeed the whole appearance of the posterior aspect of the cords and the general appearance, pointed to a case of early tubercle.

The PRESIDENT asked Mr. Collier whether he had made an examination as to tubercle bacillus.

Mr. MAYO COLLIER: I have not examined for tubercle.

MR. MAYO COLLIER : (Third case.) This is the case of an old man who has been all over the country acting as umpire at cricket matches. For the last eight weeks he has had great difficulty in swallowing, and the dysphagia is apparently confined to the upper portion of the œsophagus. I saw him swallow, with very great difficulty, some fluid. He takes a very long time in swallowing a tablespoonful of fluid, occupying twenty minutes to half an hour to swallow as little as half a pint, so that his whole day is spent in feeding himself. He complains of difficulty in swallowing ; there is no pain, but on examination one finds there is evidently some thickening of the posterior arytenoid aspect and swelling of the upper portion of the œsophagus. There is an elevation in the pyriform fossa which, to my mind, looks very much like a growth. This is about a month ago. I put him on iodide of potassium and bromide, and he has improved. I examined his chest cavity very carefully, and I could find nothing to assist one in the diagnosis there, and I examined his liver, because one knows there are several cases on record where dysphagia has been due to liver disease, but there was no evidence of such in this case. However, judging from recent examinations, there is very little doubt that there is a growth there—probably commencing epithelioma in the hyoid fossa—which sets up this trouble. I should say the man's prognosis is very bad. There was distinct tenderness on the left side, just opposite the cricoid cartilage, but this and the fulness have disappeared under treatment with iodide of potassium. I tried to pass a bougie, but I could not get the smallest bougie down. There was complete obstruction, apparently spasmodic, directly the bougie came to the top of the œsophagus.

DR. FARQUHAR MATHESON : Looking at the throat in this case, I notice that the tonsils are very large, and I should say that syphilis had been contracted at an earlier period of this man's history. There is no question that it is a new growth, evidently of a sarcomatous nature. I believe if Mr. Collier will inquire further, that he will find syphilitic affection in former days. It would be interesting if he would report at some future meeting of the society the development of the case and the procedure he adopts.

DR. LAW : I should like to ask Mr. Collier whether the patient is an alcoholic subject. I am thinking of the possibility—certainly from the laryngoscopic image there is only a slight swelling to be seen on the right side—of the trouble being due to spasm.

THE PRESIDENT : The case looks to me like one of epithelioma of the œsophagus. I should say possibly the more acute swelling referred to, which occurred on the left side of the cricoid cartilage, and subsided under iodide of potassium, may have been due to acute inflammation with enlargement of the glands of the laryngo-tracheal.

DR. EDWARD LAW. *Case of Double Antral Disease.*

S. W., aged forty-two years, fireman, was sent to my hospital clinic last December complaining of a slightly fœtid discharge from both nostrils and a feeling of general discomfort about the root of the nose and in the malar regions. The symptoms were stated to be aggravated and some-

times accompanied by neuralgic pains after exposure to cold and wet. He believed that for several years he had received relief by syringing out daily both antral cavities, with a weak carbolic solution, through apertures in the alveolar ridge on the right and left side of the mouth.

The patient, who was evidently much depressed and very sensitive about his condition, related the following history :—When twelve years of age he injured his nose through a fall. The swelling gradually disappeared in a week or ten days, and afterwards gave him no further trouble. Five years ago last September he suffered from a dull aching pain (not toothache) with swelling and tenderness of the right side of the face. He went to the Dental Hospital and had a sound tooth extracted without relief ; three days later a second molar tooth (also sound) was extracted on the same side, and a perforation made through the socket into the right antrum. The evacuation of a quantity of pus followed this operative procedure. The patient attended daily at the Dental Hospital for six months, and was then taught to use the syringe himself. The discharge of muco-pus has never ceased, and he has regularly continued to irrigate the antral cavity several times daily. Whilst attending the Dental Hospital he was sent to Golden Square, and a polypus was removed from the right nostril.

There is no history of carious teeth and the abscess was supposed to be possibly due to a blow, cold, or venereal disease. I may here mention that the patient states that “a new tooth has come through behind the one removed.”

Twelve months later, in 1892, very similar symptoms occurred on the left side, without apparent cause, and the patient had a sound tooth extracted at Guy's Hospital, and an opening made through the alveolar socket into the left antrum. A large quantity of pus is reported to have escaped through the puncture.

The patient has constantly irrigated both antra through the mouth for the last three years, and the solution injected has always brought away a variable quantity of cloudy, flocculent discharge from the nostril of the respective sides.

At his visit there was no pain or tenderness on distension, and on examination of the anterior nares I could discover nothing except general congestion of the nasal mucous membrane ; a little muco-purulent discharge, with no offensive odour and not particularly abundant, about the middle meatus ; swelling of the anterior extremity of the right inferior turbinate and slight polypoid proliferation of the right middle turbinate. Transillumination gave no satisfactory assistance.

I applied a little chromic acid to the right middle turbinated body, and came to the conclusion from the long duration of his trouble and trivial objective symptoms that his condition was greatly aggravated, if not entirely kept up, by excessive treatment, in the way of too frequent irrigations. I advised him to inject a little warm Sanitas solution night and morning through both antral cavities, and to gradually give up this method of treatment. At first I found him very nervous and obstinate, but, by permitting him to sniff a little warm salt and water through his nostrils, I have persuaded him to use his ball-syringe less frequently. To-day he has used it before you, after an interval of seventeen days, the

solution coming out quite clear from the right nostril, and only bringing about half a teaspoonful of non-odorous discharge from the left antrum.

I think the case is interesting, as a bilateral affection, from the history and from the duration of treatment. I should like to ask the members of the society if any steps should be taken to close the apertures in the alveolar ridge, and so prevent the possible entrance of particles of food and micro-organisms from the mouth. Personally, I do not think that any more serious surgical interference is desirable, as the patient is quite able to follow his employment.

Dr. FARQUHAR MATHESON : It has fallen to my lot to see, I think, this week three cases of this malady. Two of the cases were operated upon, one at the Dental Hospital. The usual tube has been passed to the antrum through the alveolus. The other, a lady, who had also been operated upon some years ago. The third case was that of a gentleman, who had consulted me, some three or four years ago, with the same condition, and I recommended him to submit to an operation of this kind. He declined. I have seen him again this week, and of the three I think the one left alone is the best. He has occasional seizures of inflammation in the antrum ; the pain continues for two or three days. The pus discharges itself, and, after using boracic acid lotion for a few days, he is perfectly well and free from any inflammation for a considerable time. The other case that was operated upon at the Dental Hospital came to me the other day complaining of severe pain in the cheek bone and over the nose and eyes. No doubt there was inflammation in the antrum, and daily syringing through the alveolar opening has to be performed. I do not know that any benefit resulted from opening the antrum at all.

Of all the cases that I have seen of this nature, I must say that little good resulted from operation, and that, as a rule, they do as well by local treatment, viz, the nasal douche and fomentations to the nose, as by being surgically interfered with. Generally, in those cases of maxillary abscess, the region of the pain is, I believe, in the nostril, and, as a rule, you will find considerable enlargement of the middle turbinated bodies, and, if this condition is treated appropriately and efficiently, one will get all the benefit that can be expected from operations. There are fashions in everything, and there is fashion, I think, frequently in operations. The accessory cavities have come into fashion lately in the same way as mastoid incisions.

Mr. MAYO COLLIER : We are indebted to Dr. Law for bringing this case before us. I should say my experience coincides somewhat with his. Dr. Law has shown the case in order to get our opinions as to whether any surgical procedure shall be adopted, and whether he should attempt to close the antrum.

I am strongly of opinion, seeing that the right antrum is, practically speaking, well—there is no discharge, the antrum is returning to a healthy state, for it has not only one opening into the air, but it has apparently two, it plainly communicates with the nasal cavity, and for seventeen days there has been no secretion—that there is no reason why the opening in the alveolus should be closed. I should advise that no more syringing be resorted to, and I should expect that in the course of a month the opening will heal up. I should put a little plug into the alveolus, a small

piece of iodoform wool, just sufficiently large to prevent decomposing particles of food getting into the antrum. With regard to the left side, were the patient a man of position and the trouble had considerable mental effect upon him, I should say open the antrum and see what is necessary to be done. Probably there might be granulation tissue there; but, under the circumstances, my advice is, do not touch it. If he were a man of position and suffered much inconvenience, I should say do not resort to any pettifogging treatment, but have a good look in, put a small trephine in the canine fossa, and then treat it definitely. The result will be satisfactory. It is exactly the same in those frontal cases. You may go on syringing them out month after month and year after year, when a little operation of ten minutes would have let you see the whole trouble. In this case, in addition to the plug, I would advise that the left side be syringed out regularly twice a week with chloride of zinc, four or five grains to the ounce, and probably the wound will heal up. From the history of the case and its long duration, I think there is not very much the matter.

Dr. LAW : I should like, sir, to say, in reference to the remarks made by Dr. Matheson in connection with operations on the antrum, that this man five years ago suffered the most acute pain. He went to the Dental Hospital and had two teeth extracted and attended daily afterwards for six or seven months; two years later similar symptoms occurred on the right side. They were so severe that the man, in spite of his previous experience, went to Guy's Hospital and had a similar operation performed on the right side and gained great relief. In reference to the future treatment of the case, I quite agree with the remarks which Mr. Collier has kindly made, and perhaps on some other occasion I shall have the opportunity of bringing the patient again before the society. What I was most anxious to obtain was an opinion as to the desirability of closing the apertures leading from the mouth into the antral cavities, particularly the opening on the right side, in order to prevent the entrance of particles of food, microbes, or other foreign material.

Dr. PEGLER exhibited, under the microscopes, a series of sections illustrating the morbid histology of turbinal hypertrophies. Owing to the lateness of the hour, he deferred his paper on the subject to a future meeting.

THE BRITISH LARYNGOLOGICAL ASSOCIATION.

WE have, in a former issue, inserted a notice that the Annual Summer Meeting of this Association, to be held on July 25th next, is to be of a special character.

The arrangements are now fairly complete, and we are enabled to announce the following programme :—

Thursday, July 25th.

10 a.m.—Exhibition of cases.

10.30 a.m.—President's Address, to be followed by Discussion on the "Treatment of Chronic Laryngeal Stenoses," to be opened by

the President (Dr. MCNEILL WHISTLER) and Dr. SAJOUS, of Paris.

3 p.m.—Discussion on “Surgical Treatment of the Accessory Cavities of the Nose,” to be opened by Dr. BRYSON DELAVAN, of New York, and Dr. LUC, of Paris.

In the evening a reception will be given by the President, Dr. WHISTLER.

Friday, July 26th.

10 a.m.—Exhibition of cases.

11 a.m.—Discussion on the “Therapeutics of Diphtheria, with Special Reference to the Antitoxin Treatment,” to be opened by Dr. SIMS WOODHEAD and Prof. C. SHERRINGTON.

3 p.m.—Discussion on the “Treatment of Laryngeal Tuberculosis,” to be opened by Dr. HERYNG, of Warsaw, and Dr. GLEITSMANN, of New York.

7.30 p.m.—The Annual Dinner of the Association.

† Saturday, July 27th.

A Garden Party will be given by Dr. and Mrs. NORRIS WOLFENDEN, at Tillingbourne Park, near Dorking, to the Members and Guests of the Association.

Papers and contributions are promised from Prof. H. KRAUSE (Berlin), Prof. MASSEI (Rome), Prof. GUYE (Amsterdam), Drs. C. H. KNIGHT (New York), J. N. MACKENZIE (Baltimore), HUNTER MACKENZIE (Edinburgh), and Dr. E. J. MOURE (Bordeaux).

A Pathological Museum will be under the direction of Mr. R. LAKE, and an Exhibition of Instruments, etc., under the management of Mr. F. J. REBMAN.

The meetings will be held at the Rooms of the Royal Medical and Chirurgical Society, 20, Hanover Square.

We are requested to state that the presence of medical men at the meetings will be welcomed by the Association.

As will be seen, the programme is of a varied and extremely important character, and the meeting is likely to prove highly successful. We congratulate the Association on its enterprise, and cordially desire that the Summer Meeting may meet with the success that it deserves.

NEW YORK ACADEMY OF MEDICINE.*March 27th, 1895.*

Dr. D. BRYSON DELAVAN, *Chairman.*

SECTION ON LARYNGOLOGY AND RHINOLOGY.*A Case for Diagnosis.*

Dr. J. S. WATERMAN : This patient is a widow, forty-three years old, a native of France. Her family history is negative. Since her husband's death, about a year ago, she has been subjected to a good deal of worry. She has had no children, but two miscarriages. There is no history of syphilis. Her health, previous to her present illness, has always been very good. In January of the present year she had an attack of grippe. On February 21st she went to a physician's office, who told her that she had a cyst of the tonsil, and that he would open it. After making two unsuccessful attempts to do this, he cut into it quite deeply, the incision being followed by a strong jet of blood, which he was unable to control. Other physicians were called in, and, by means of external digital pressure and cauterization internally, the bleeding was finally checked, not, however, until the woman was almost exsanguinated. About two weeks ago she came to the throat department at Roosevelt Hospital, and, on inspection, a tumour was found in the right tonsillar space, which still persists. It is about the size of an English walnut, and projects toward the median line; there is very marked pulsation, and there is quite a noticeable thrill, externally, at the angle of the jaw. Question: Is it an aneurism, and if so, from what artery does it arise?

Dr. JONATHAN WRIGHT : I saw this case about a week ago, and am rather inclined to think that the tumour has slightly increased in size since then. The growth appears to be aneurismal in character, although I would not venture to make a positive diagnosis. Taking it for granted that it is an aneurism, its situation would indicate that it takes its origin from the external carotid, probably from some anomalous branch. I have seen two cases in which a small, pulsating tumour on the posterior pharyngeal wall was apparently produced by the abnormal course of the pharyngeal artery.

Dr. D. H. GOODWILLIE : While I do not care to express a positive opinion, I am inclined to think that this tumour is an aneurism arising from one of the branches of the external carotid. I have seen several cases of aneurism arising from the superior and inferior dental branches. In one instance of the latter coming under my observation the hæmorrhage was very severe, and persisted after tying off the external and common carotids.

Dr. F. J. QUINLAN : This case reminds me of a cyst of the tonsil which came under my observation two or three years ago. Beneath it there was a distinct pulsation that pushed out the growth. In that

instance the cyst was evacuated, but it refilled in five or six weeks. I consider it rather risky to incise tumours of this character without mapping out distinctly the relation they bear to the vessels in the vicinity. The case, however, is one that needs immediate attention, as it may be of serious moment to this woman if such an imperative procedure is delayed.

Dr. WRIGHT : The woman states positively that she did not have this tumour in her throat before the physician operated on her.

The CHAIRMAN (Dr. Delavan) : It is possible that the physician who operated upon this woman may have had a different condition to deal with than the one now present. At that time there might have been little or no pulsation in the growth, and nothing to indicate that the condition was peculiar. At this season of the year tonsillitis is rife, and the patient may have had an apparent swelling of the tonsil which the physician punctured, as is so often done.

Dr. W. K. SIMPSON : As I do not know anything about the woman's original condition, I would like to know if the tumour was pulsating when first seen. It is safe to say, on general principles, that a careful physician would not have made an incision into a pulsating tumour without being somewhat sure of its nature.

Dr. HERMAN KNAPP : This woman, in her present condition, is in constant danger of having a fatal hæmorrhage. I think ligation of the common carotid should be done as quickly as possible. This has been successfully done in cases of exophthalmos produced by arterio-venous communication in the cavernous sinus.

Dr. WRIGHT : I think it would be more advisable in this case to cut down and see where the tumour originates, and then ligate.

Dr. DELAVAN : I would call attention to the fact that ligation of the common carotid has not always checked hæmorrhage after tonsillotomy.

Dr. WRIGHT : The external carotid has also been tied without checking tonsillar hæmorrhage.

Dr. KNAPP : Cases are on record in which fatal hæmorrhage occurred after extirpation of the eyeball ; the bleeding could not even be controlled by tying the common carotid, or by any other means.

Dr. ROBERT C. MYLES : I desire to exhibit a modified post-nasal forceps, which I have found very satisfactory for the purpose of removing nearly all of the third (Luschka's) tonsil on the first insertion. The instrument has fenestra and is sufficiently small to enter the posterior nares and to pass between the growth and the tubes, and by means of it the growth can be twisted off, instead of cutting it—which is apt to produce severe hæmorrhage. I also wish to present a large third tonsil intact, which was removed by this method.

Dr. DELAVAN : I desire to exhibit this glass tongue-depressor ; it is of French make, and very readily kept aseptic. It is made of annealed glass, and is not easily broken.

Three Cases of Cystic Polypi of the Nasal Cavity.

Dr. DELAVAN : While cystoma of the nose are by no means rare, they are sufficiently unusual to warrant the report of these cases, which

have recently come under my observation. The first patient was a woman, aged thirty-five years, who had apparently suffered from nasal polypi for about three years. On inspection, I found the posterior half of the right nasal cavity filled with a mass of polypi, and another growth in the naso-pharynx, the latter about an inch in diameter. The mass in the nose was removed at one sitting; and, at a subsequent sitting, after considerable difficulty, I succeeded in removing the posterior growth with the Jarvis snare. (Microscopical report by Dr. Eugene Hodenpyl, "Loose Fibroma.")

The second case was that of a man, aged forty, who for six years had suffered from nasal polypi, which several times had been removed. When he came under my observation he had a growth which nearly filled the retro-pharyngeal space, and a number of others in the posterior half of the right nasal cavity. The latter were easily removed, but recurred with considerable persistence, and were composed of a remarkably dense, well-organized tissue, and were not cystic. That in the retro-pharyngeal space resisted all efforts at removal until it was punctured; this was followed by a large escape of fluid and the immediate collapse of the tumour: its sac was then readily separated at the base, just beneath the posterior end of the inferior turbinated body, with an ordinary polypus forceps. The last operation was performed eight months ago, and up to the present time there has been no recurrence. (Microscopical report by Dr. Hodenpyl, "Loose Fibroma.")

The third patient began to be troubled with nasal polypi when he was eight years old. Between the ages of eight and twenty-two years he was operated on six times for the removal of such growths. These operations, as a rule, had been very severe, and had given him much pain. At the operation prior to the one which was performed by myself, a distinguished surgeon had split the patient's nose, separating the nasal bones, and removing the growths in that manner. This left a large but not very perceptible scar, and the subsequent history of the case shows that so radical an operation was unnecessary. When the patient came under my care he presented two enormous growths, filling the right nasal cavity. Several unsuccessful attempts were made to surround them with the loop of the snare, and other methods of removal were resorted to, but also failed. On account of their tenseness, and the tough and well-organized appearance of the tissues, it was difficult to recognize them as being of a simple nature. However, in order to reduce their size, and to ascertain whether they were cystic or not, a puncture was made in one of them with the galvano-cautery; this was immediately followed by a spurt of clear fluid and collapse of the tumour, which was found to be attached to the upper surface of the inferior turbinated body. The second tumour, which was likewise punctured without difficulty, was attached near the entrance to the antrum of Highmore. There were no evidences of antral disease, although the transillumination test was carefully applied. The remnants of the two growths were submitted to Dr. Hodenpyl for microscopical examination, who reported that the sac was composed of columnar ciliated epithelium, and contained granular matter, fibrin, and cell detritus. His diagnosis was "loose fibroma,

commonly called mucous polypi." The interesting points in connection with the last case are: (1) The early stage at which the growths appeared; (2) the persistency with which they recurred; (3) the unnecessary severity of the surgical operations sometimes undertaken for their relief; (4) The facility with which they were removed through the natural passages.

Dr. SIMPSON: One reason why these cystic growths in the nose are so apt to recur is that they originate high up in the middle fossa, and, in removing them, we do not reach their highest point of insertion. In one case under my observation I have removed a large cyst from the nose once or twice yearly for some time past. They sometimes recur very rapidly.

Dr. MYLES: A number of cases have come under my observation where incision into a supposed encysted abscess in a polypus produced an exudation, which, under the microscope, has proved not to be pus, but the products of fatty degeneration. This condition I have also met with in Luschka's tonsil.

Bryson Delavan.

THIRTEENTH CONGRESS FOR INTERNAL MEDICINE IN MUNICH.

Held 2nd to 5th April, 1895.

HEUBNER (Berlin). *On the Results of Heilserum Therapy.*

Of 1332 patients treated without serum 38·3 per cent. died; of 1390 treated with serum 19·1 per cent. died. The earlier the treatment is begun the better is the prognosis. A difference in the clinical process under this treatment cannot yet be determined with certainty. In 16 of 181 cases the local process made favourable progress after the injection. In other epidemics the larynx was attacked in one-fifth of the cases. In 19 per cent. of these cases the injection was followed by an exanthema, sometimes combined with fever and pain in the joints. The immunizing power is of some duration. The author recommends the treatment.

BAGINSKY (Berlin). The mortality of the Kaiser Friedrichs Hospital was in the years 1890 to 1894 equal to 41 per cent. Of 525 cases treated with serum the mortality was 15·81 per cent. The mortality of tracheotomies was in other years 59 per cent., now 38 per cent. The heart affections are not influenced by serum treatment, but the cases of heart paralysis are diminished. On *post-mortem* examination myocarditic degenerations were in other years 37 per cent., now 24 per cent. Phenol could not be found in the urine. Abscesses were observed in seven cases. In these abscesses staphylococci or streptococci were not found. Exanthemata were observed in 13 cases, sometimes combined with fever and pains in the joints. The author concludes that the anti-toxin treatment is the best, and that the concomitant effects are of no

significance. The efficacy is undoubted, in spite of the fact that the manner in which the effect is produced is not yet clearly ascertained.

WIEDERHOFER (Vienna) recommends antitoxin emphatically. He reports his results (*vide* the Report on the Wiener Aerzte Gesellschaft).

HAGENBACH (Basel) and KORTE (Berlin) have sent their statistics, which are favourable to the treatment.

RANKE (Munich). Out of 127 injected cases, 26, equal to 22½ per cent., died; of six not injected one died. The mortality in the last years in the Münchener Hospital was 42, equal to 57 per cent. During the antitoxin period it was 21 per cent. Of 96 cases of primary diphtheria, 63 had laryngo-stenotic symptoms. In 33 per cent. the laryngo-stenosis disappeared after the injection (in other epidemics it disappeared in only 5 per cent.). Of 42 intubated cases, 13, equal to 30·9 per cent., died; in the other epidemics 69 to 73 per cent. Secondary tracheotomy in other epidemics was necessary, owing to decubitus, or descending croup. During the antitoxin treatment decubitus was the only indication, and therefore the prognosis was better. The time of intubation was much shorter in the antitoxin period. He has observed some exanthemata, but they are without significance, considering the great effects of the treatment.

KOHTS (Strasburg) is not enthusiastic about the serum treatment. From 1889 to 1894 he has observed 841 cases, out of which tracheotomy was performed in 491. The mortality of the tracheotomies was 25 to 50 per cent.; of the others 7 to 18 per cent. There were cured of those who came under treatment the first day of the disease, 100 per cent.; the second, 80 per cent.; the third, 33 per cent. Since November, 1894, 80 patients were treated. In 47 cases the serum treatment was applied. Of 13 not tracheotomized one died (myocarditis nephritis broncho-pneumonia). Of 34 tracheotomized 10 died. In some cases arose a descending croup, in spite of the treatment. The proportion of mortality of the tracheotomized cases was somewhat more unfavourable than two years before.

GRAWITZ (Berlin) believes it possible that the injection of serum alone can have influence, and that therefore the injection of pure blood serum must be tried in a larger number.

SEITZ (Munich) has studied the complications observed before the introduction of the serum treatment, with the result that complications in the kidneys are not more frequent under the serum treatment. Exanthemata are much more frequent, but without significance.

STURZNIG (Jena) reports on 59 cases treated with serum. The mortality was 20 per cent.; in the last years, 25 per cent. Of 27 tracheotomized cases 56 per cent. were cured; in other epidemics, 51 per cent. The results differ very much less with other observers.

TRUMP (Graz) has found in diphtheritic children virulent bacilli in the other mucous membranes, which showed no specific degeneration.

REHN (Frankfurt-a-M.) recommends the treatment, of which he had a good impression.

RAÜCHFUSS (St. Petersburg) reports on 37 cases, and recommends the serum treatment.

TREUPPEL (Freiburg-i-Br.) reports experiments on animals, which

prove that the injection of antitoxin produces sometimes transitory albuminuria, but that it has no damaging influence on the organism.

JEUDRASSIK (Budapest) remarks that the immunization and the therapeutic effect of antitoxin are quite different.

SIEGERT (Strasburg) found, in cases of diphtheria, albuminuria in 14 per cent. In cases treated with injections in 41 per cent.

HAHN (Berlin) remarks that further studies must show what is antitoxic effect and what is albumose effect.

VON MERING (Halle). Of 74 cases treated with serum 4 died, equal to 5 per cent. Before the treatment 30 per cent.

VIERORDT (Heidelberg) remarks that the nature of the disease is very different in the various epidemics, and that therefore it is very difficult to form a certain judgment on the effects of a treatment.

TAKSCH (Prague) remarks that albumose in urine is found in all infectious diseases.

VON NOORDEN (Frankfurt-a-M.) reports on 81 cases with 23 per cent. mortality. In other epidemics it was 45 per cent. In 21 cases paralysis were observed; 8 cases died from heart paralysis. The author recommends the treatment.

HEUBNER concludes that all authors have established that serum can be applied without any damage, that the mortality is diminished, and that therefore further application of it is indicated. *Michael.*

PARIS SOCIETY OF LARYNGOLOGY, OTOTOLOGY, AND RHINOLOGY.

January 4th, 1895.

President—Mons. MÉNIÈRE.

Case of Complete Deafness occurring in the course of Leucocythæmia.
By Dr. E. MÉNIÈRE.

Madame X., aged forty-three, suffering from leucocythæmia, was considered to be in a desperate condition six months ago. One day, during a period of general amelioration, in the month of August, the patient experienced violent tinnitus, vertigo, and nausea. The right ear became completely deaf in the space of a few hours, the left ear was affected to a considerable extent, at the same time maintaining a very slight degree of hearing power, which continuously became less and less. On examination of the ear, no visible lesion was observed either recent or of old standing. The functional examination confirmed the fact of her having complete deafness on the right side, and almost complete on the left. In view of the small number of cases published, one case, although incomplete, possesses considerable interest. Dr. Ménière has seen four such in his practice, but without having the opportunity of making a *post-mortem* examination. He draws attention to the fact that the symptoms which

presented themselves at the commencement were those of Ménière's complexus, and that they occurred during a period of amelioration as regards the leucocythæmia. According to other authors, in the cases that have been observed there has generally existed some lesion of the middle ear, but in this case nothing of the kind could be detected. No method of treatment produced any result.

Ought we always to Operate upon Adenoid Vegetations? By Dr. HERNET.

If up to 1860, the period at which Czermac discovered them, adenoid vegetations remained unrecognized, it must be allowed that during recent years they have amply avenged themselves for the neglect under which they had lain for centuries. During the last fifteen years great numbers of pharynges have been scraped. Has it always been done in an opportune way? That is what Dr. Hernet has set himself to elucidate. He considers that the operation is performed too frequently, and in many cases it is, to say the least, premature; this idea first occurred to him in 1884, when he had an opportunity of examining two children, brothers, aged seven and eight years. They suffered with cough during winter, breathed through the mouth, and spoke "through the nose." The mother, who brought them, presented the physiognomy characteristic of those who have had post-nasal adenoids in early years. On examination, posterior rhinoscopy confirmed the diagnosis made at first sight, namely, the presence of voluminous vegetations in both of the little patients. They were not deaf; they had never had discharge from the ear, their growth appeared normal, and there was no want of aptitude for study. There was no sign of morbid change in the membranes of the tympani. The mother said that she had had the same symptoms in her childhood, but no evil result had taken place. Dr. Hernet proposed operation, but this was absolutely refused. Each year the children were brought back for investigation, and, surprising to relate, no complications ensued, although they continued to breathe with the mouth open, and at present they have grown up tall and strong. The vegetations still exist, although markedly less in volume. They have still the classical oval face, but this, as we all know, will persist even after the removal of such growths.

Since this experience Dr. Hernet looks, in every case of a child affected with adenoids, for the following symptoms, and in their absence he advises the postponement of the operation—namely, want of development, inaptitude for work, persistent headache, aural complications. He cautioned the relatives that if any of these complications presented themselves surgical interference should be immediately carried out. From the end of the year 1886 he has acted upon this principle, and up to the present in one hundred and three cases. Out of these he has only been obliged to operate on fourteen.

It might be objected that with this somewhat exaggerated prudence the patients are exposed to aural disturbances which may become serious even after the removal of the vegetations, but we must keep in view the possible risks resulting from the expectant treatment, but, at the same time, those which may result from surgical interference. Of these com-

plications one alone may be serious, namely, purulent median otitis. With our therapeutic means at the present day, one may fairly say that such a condition is far from irremediable, even from the point of view of audition, or of continuance of otorrhœa. Suppuration of the middle ear, under skilful treatment, is generally quickly subdued, especially after the removal of the cause, namely, the vegetations. The pathological rupture of the membrane resulting from the otorrhœa cicatrizes with great rapidity, and treatment for a few days is almost the only undesirable result of this expectant mode of action.

It seems reasonable to suppose that this slight risk is amply compensated for by the absence of those which may result from surgical interference. The list of fatal results following scraping of the pharynx is already a long one. Everyone must remember the cases of fatal meningitis following curettage, possibly carried out too energetically and implicating the basilar process. Some years ago a child succumbed to bromide of ethyl. Quite recently Dr. Sandford related before the British Association of Laryngology and Rhinology, on July 13th, 1894, the case of a little patient who died of convulsions six hours after the scraping away of adenoid vegetations, preceded by the application of cocaine. It may be objected that in this case the result was due to this medicament as much as to the operation, but it is none the less certain that if there had been no surgical intervention there would have been no necessity for cocainization. At the same meeting Mr. Mayo Collier cited an analogous case, death occurring in ten minutes. On the same day Mr. Lennox Browne stated that he knew of cases of death which had followed the removal of adenoids. Further, it is unnecessary to refer to the post-operative complications, such as hæmorrhage for example, which at any time may cause anxiety.

Scraping of the pharynx is, therefore, not necessarily an absolutely safe operation, as we have so long been inclined to think. At the same time must, we never operate? On the contrary, this would be a gross exaggeration, but it is essential that necessity for operation should be clearly indicated. The patients may then be divided into two categories: those who should be operated on at once, and those whose cases may be allowed to wait.

Intervention is necessary in children who present the following symptoms: retarded or arrested development, persistent headache, inaptitude for study, intense difficulty in breathing with threatening suffocation, diminution of hearing power due to repeated catarrh of the tympanum, purulent median otitis, a considerable bulk of the vegetations causing constant salivation and appearance of hebetude.

Operation should be postponed and the patients kept under observation when we find the following conditions: vegetations in small quantities, general development normal, absence of headache or of aural complications, very slight catarrhal condition of the primary respiratory faculties. At eighteen years of age it is useless to intervene without formal indications, because vegetations in most cases undergo, about this time of life, a form of repression which prevents them from causing discomfort or danger.

To these two classes some might add a third, including those children in whom there exists some condition contra-indicating operation, but Dr. Hernet does not think so. In cases of hæmophilia it is necessary to act with extreme circumspection, and it is prudent to avoid the use of bromide of ethyl in those who are affected with disease of the heart.

He has formulated the following conclusions. First : Scraping away adenoid vegetations is not an absolutely innocent operation such as one can carry out without danger, even when all precautions are taken. Second : There are cases in which we ought to abstain from operation while, at the same time, keeping the children under careful observation. Third : There are other cases, infinitely more rare, in which surgical intervention should only be carried out with extreme circumspection.

At the December meeting the following officers were elected :—

Dr. LUC, Vice-President.

Dr. MENDEL, Annual Secretary.

Dr. POTIQUET, Treasurer.

At the January meeting the President read a letter of resignation from Dr. Gouguenheim. This resignation was accepted.

General Secretary, Dr. SAINT-HILAIRE.

Dundas Grant (Trans.).

THE DUTCH SOCIETY OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY.

Second Annual Meeting, 1st July, 1894, Amsterdam.

“Monatsschrift für Ohrenheilkunde.”

President—Prof. GUYE.

Treasurer—Prof. DOYER.

Secretary--Dr. BURGER.

Prof. A. A. G. GUYE (Amsterdam). *A Case of Crest on the Septum Narium.*

The patient which I present to you, aged eighteen, has been under my treatment several times since 1883 on account of inflammation of the middle ear, hypertrophy of the tonsils, and adenoid vegetation. After being out of my observation for six years, he came to me again in 1892 because the left nostril had become completely impermeable. I found a large sharp-edged shelf on the septum which formerly was not present, and the existence of which I attributed with very great probability to a blow on the nose from a cricket ball in the previous year. It had, in part, united with the lower turbinated body. I removed it by means of a saw and chisel on the 15th July, 1892, and used in the after treatment

an india-rubber tube of six and two-thirds, and later of five millimètres, in diameter, which was worn in the nose, and on the 13th August the patient was dismissed as cured. Half a year later, in January, 1893, the patient presented himself again, and I found the left side of the nose again completely closed up by an outgrowth from the septum. This outgrowth was removed, and treated in the former way, but after three months this nostril appeared again reduced to a slit, and I determined to treat the septum systematically by means of india-rubber tubes in the orthopædic fashion. I introduced tubes of gradually increasing thickness (six, eight, ten, and twelve millimètres), allowed them only to be removed for one or two hours daily, and to be retained for the rest of the time. At present the patient has, for half a year, worn a tube of eleven millimètres in thickness and ten centimetres in length daily, for only one or two hours, in order to prevent renewed narrowing of the nasal passage. The headache and aprosexia, which had never left him as long as his nose was obstructed, have completely disappeared.

There are three points of interest. Firstly, the traumatic origin of the complaint, which is considered the usual one, and which in this case is established with certainty, because before the injury I frequently examined the nose, and found no crest; secondly, the tendency to recurrence, because the septum after it had been thrown out of balance by the injury continued to bulge more and more towards the affected side; thirdly, the excellent results derived from the orthopædic treatment, which I intend to continue until the patient attains his full stature. I use tubes of from eight to ten centimètres in length, so that they reach the posterior wall of the pharynx. When that is irritated I draw the tube out for a little distance. Shorter tubes readily slip backwards, so that there is some difficulty in removing them.

Dr. W. POSTHUMUS MEYJES (Amsterdam). *Two Cases of Carcinoma of the Pharynx.*

In the two cases which I bring before you there exists a striking disproportion between the slightness of the patient's complaints and the seriousness of the disease.

The first patient, thirty-four years of age, has for the last half year had obstruction of the right side of the nose, and for six weeks a hard swelling on the right side of the neck. I found in the naso-pharynx a growth the size of a pigeon's egg, which was firmly attached to the right lateral wall and to the vault of the pharynx. It extended to the left of the septum and pressed the soft palate downwards. The patient had had a severe nasal hæmorrhage six months before. The diagnosis was clearly that of a malignant tumour. In order to give the patient air I removed the growth with the Gottstein ring knife, and by this means a free nasal respiration was established. The microscopical investigation gave distinct evidence that the disease was carcinoma.

The second patient, a powerful man, aged fifty-one, suffered since the autumn of 1893 from bilateral nasal obstruction, and occasional shooting pains in the neck. Two months later there was an increasing swelling round the neck. There existed a fœtid nasal suppuration, and for some

weeks a discharge from the right ear. The whole nose was filled with firm tumours, which bled readily, and with foetid pus. The right side of the soft palate was projected downwards by a growth emanating from the right wall of the pharynx. In the left half of the naso-pharynx also there were tumours. Microscopical diagnosis: carcinoma. The growth in all probability arises from the softened bone; the slight degree of general disturbance was most striking.

Prof. PEL (Amsterdam).

(A) *Hysterical Posticus Paralysis.*

This was a young woman, with left-sided posticus paralysis, in which none of the usual causes could be made out. There was no tabes, nor any other organic disease of the brain or spinal cord. The aorta, the mediastinum, the apices of the lung, as also the œsophagus and the thyroid gland, were perfectly healthy. On the other hand, the patient had a number of hysterical symptoms, and Prof. Pel considered the case one of hysterical posticus paralysis.

Dr. BURGER advised the greatest reserve in regard to diagnosis of such cases. As Moritz Schmidt had pointed out, in a large percentage of recurrent posticus paralyses the cause was quite obscure during life. A swollen mediastinal or cervical gland can produce such paralysis by pressure. He considered hysterical posticus paralysis a very unlikely thing, because the posticus is a genuine respiration-muscle, and its chief innervation is derived, not like the muscles of speech, from the cortical centre, but from the medulla oblongata. He asked whether, in hysteria, paralysis of the diaphragm or the intercostal muscles was ever seen.

Prof. PEL remarked that in hysteria any kind of nervous disturbance would arise, and why should the posticus muscle be an exception?

Dr. ZWAARDENAKER instanced ischuria as an example of paralysis of an automatic muscle.

(B) *Posticus Paralysis in Tabes.*

A patient, aged fifty-seven, in whom there existed bilateral posticus paralysis. Previously a transitory paralysis of the abducens had been observed, and the diagnosis of tabes had been made and been confirmed by other evidences.

Dr. BURGER had seen the case some time previously, and mentioned the interesting fact that there was then a secondary abductor contraction of the left vocal cord, nothing of the kind having yet shown itself in the right.

Prof. PEL remarked that since then, as could now be seen, the right vocal cord had *approached the middle line*.

Dr. H. BURGER (Amsterdam) and Prof. PEL. *A Case of Syphilitic Paralysis of Cranial Nerves.*

A patient, aged twenty-three, had come under treatment in June, 1893, for primary and secondary syphilis, for which he was treated with mercurial injections, and dismissed free from symptoms on the 27th July. On the 10th October he became affected with vertigo and uncertainty of

gait, deafness in the right ear, and diplopia, and right-sided paralysis of the face and palate. There was, therefore, paralysis of the right side of the velum palati and slight paresis of the right abducent nerve. There was a nystagmus on fixation in any direction, normal pupillary action, no diminution in the field of vision, and no abnormality in the fundus oculi. The right facial nerve was completely paralysed in all its branches; there was no reaction of degeneration. The auditory acuity was distinctly diminished on the right side, both by bone and ear-conduction, for high as well as low tones. Rinne's test was positive, both on the right and the left side, and Weber's test showed no lateralization, the drums and tubes were normal; there was, therefore, paresis of the right auditory nerve. Further, complete paralysis of the right posterior crico-arytenoid muscle, hyperæsthesia and diminished reflex irritability of the mucous membrane of the right nasal passage, complete anæsthesia, and loss of reflex in the right half of the pharynx and the larynx. No affection of mobility, sensibility, or reflexes in the trunk or extremities. Under mercurial treatment so much improvement took place that in January, 1894, there remained only the paralysis of the posterior and of the palate.

The case is interesting on account of the following points:—First, the extremely short interval between the primary affection and this group of cranial nerve paralyses. Secondly, that of all these paralyses the most obstinate were those of the posticus and of the palate. Thirdly, that along with the group of right-sided paralyses there was also a right-sided hemi-anæsthesia of the larynx, a fact which is not compatible with the opinion expressed by many that the sensory innervation of the larynx is bilateral and cross. Fourthly, that in reference to the unsettled controversy with regard to the paralysis of the palate, the facial paralysis disappeared entirely, but on the other hand that of the palate persisted along with that of the posticus, so that for the innervation of the palate we have to look not to the facial but most likely to the vago-accessory nerve.

In February the paralysis of the auditory and facial nerve again appeared, and in April complete reaction of degeneration was detected by Dr. Wertheim Salomonson in the whole area of the right facial nerve. The palate and posticus continued paralytic. The patellar reflex became less distinct, and suddenly a new group of symptoms appeared, on account of which the patient was transferred to Prof. Pel's wards.

Prof. PEL described how the patient was at that time—in a somnolent and almost unconscious condition. On the right side there was detected nerve deafness, complete facial paralysis, with reaction of degeneration paralysis of the sixth nerve, the palate, the pharynx, and the posterior crico-arytenoid, with diminished sensibility and loss of reflexes, and disturbance of taste, paræsthesia, and hyperæsthesia of vision. On the left side paralysis of both extremities. No optic neuritis nor disease of internal organs. There were no less than six cranial nerves affected—the auditory, the facial, the sixth, the vago-accessory, the glosso-pharyngeal, and the trigeminus—to which were added, upon the left side, hemiparesis of the extremities. We had thus to deal with a cross-hemiplegia. Prof. Pel thought that a tumour of the pons varolii might be eliminated; first, because the paralysis of the cranial nerves

and that of the extremities had not come on at the same time ; secondly, because the hemiparesis was most probably of cortical origin (after hyperæsthesia and cramps had come on in the fourth finger, the arm became paretic, and thirty-six hours later the leg) ; and thirdly, because so many cranial nerves were affected. He thought that the hemiparesis was due to an obliterating endarteritis in the vessel of the right sylvian fossæ, and that the cranial nerve paralyses were due to an affection of the base (gummatous meningitis or periostitis).

The simultaneous occurrence of basal and of arterial syphilis is not very uncommon. The patient was treated with iodide of potassium and mercurial inunction, and at the present time was almost cured. There were no further subjective symptoms. The hemiparesis had disappeared, but the palate and posticus still remained paretic. Further, the facial nerve was still paralysed, obviously in consequence of descending neuritis. The paralysis of the palate depends not upon disease of the facial, but of the right internal accessory, and Prof. Pel considers that the vago-accessory is in all cases the motor nerve of the palate. The prognosis in cerebral syphilis is in the presence of complete paralysis doubtful, but on the other hand it is not uncommon to see the paresis disappear under suitable treatment.

Dr. H. BURGER. *Four Cases of Lupus of the Larynx.*

Two of the cases are primary, that is to say that there is no sign of lupus in any other part of the body. The first, a boy aged eighteen, suffered from dyspnoea since Christmas, 1893, and this gradually developed into complete loss of voice. When first seen, on the 6th March, 1894, he suffered with stridulous breathing and aphonia, and had a considerable amount of destructive and granulation process taking place in his larynx, though otherwise he was perfectly sound. The free portion of the epiglottis was completely eaten away, the base of the tongue merging immediately into the ulcerated granulating edge of the stump of the epiglottis, which was about the thickness of a finger and extended backwards both right and left to the ary-epiglottic folds, which were about the same thickness. The whole surface was granulating, of a dull red colour, and of a raspberry appearance. The entrance of the larynx was scarcely two millimètres in width, and nothing of the inner part was visible. The boy was taken to Prof. Van Haren Noman, and for nine weeks was treated with daily applications of undiluted lactic acid with the most brilliant results. The granulations have disappeared, the swellings subsided, the border of the epiglottis covered with a beautiful smooth mucous membrane : the interior of the larynx is quite visible and perfectly healthy. The aphonia was obviously due to swelling in the inter-arytenoid region. At the present time, during phonation, the cartilaginous glottis is still not completely closed. The voice is strong, but a little rough. The patient is as good as cured.

The second patient, a young woman, aged twenty-eight, whose father died of tuberculosis of the larynx, has since the winter (that is to say of 1893-94) suffered from headache and slight pain during swallowing, which occasionally radiated to the left ear. Sometimes during speaking

there is a slight dyspnœa. The laryngoscopic appearance was very much the same as in the former case. Here also was seen at the commencement simply raspberry-like red irregular granulations. The only thing that could be seen was the granulating anterior surface of the epiglottis. There was no secretion and no visible ulceration. From the 17th May onwards, the larynx was treated with the galvano-cautery once a week, and with pure lactic acid daily. Each time the galvano-cautery was used over a little wider area, and, to start with, the epiglottis was freed from granulation. The anterior surface is now smooth and satin-like, the edge perfectly free, and destroyed only to a very insignificant extent. The cauterization was then gradually carried along the left epiglottic fold and into the left arytenoid region. If the epiglottis is now pulled forward by means of a probe it can be seen that the left half of the entrance of the larynx, which was at first the most infiltrated, is now distinctly thinner than the right, and at the same time the interior of the larynx is seen to be intact.

From these results and from the nearly complete recovery of the first patient a very strong claim is made out for a thorough methodical and local treatment of lupus of the larynx.

The third patient had lupus in her larynx, dating from eight years back, with hoarseness and discomfort in swallowing. Subsequently the disease affected the palate, and, lastly, the nose. She is twenty-four years of age, and came under treatment in October, 1893, with partially healed lupus of the nose, extensive lupus tubercles and pin-head ulcers on the gum of the upper jaw and the hard palate. In the larynx there were granulations along the edge of the epiglottis, and a broad infiltration in the lateral surfaces of the larynx. The ulcerations in the mouth were treated with frequent galvano-cauterization and with lactic acid, but with comparatively negative results, but more recently the use of concentrated solution of chromic acid has produced distinct improvement. Chromic acid, which has been recognized as the best caustic for the various ulcerative processes in the mucous membrane of the mouth, can, therefore, be recommended also for lupus in that region. Infiltrations in the larynx which have not yet been treated locally have increased.

The fourth patient, a woman, aged thirty, has had lupus in various parts of the body. When she came under treatment on the 26th March, 1893, it had everywhere healed, except in the nose and the larynx. The tuberculated lupus on the anterior surface of the lower and middle turbinated body was cured by means of chromic acid; on the eroded edge of the epiglottis there were numerous nodules, and in the larynx an infiltration *en masse* of both the lateral surface and also of the under portion of the epiglottis. The commissure also was affected, and there resulted extreme hoarseness. Repeated galvano-cauterizations were followed by a distinct retrocession of the infiltration. In this form of lupus, as shown in the last two patients, it is very difficult to decide when the process has really healed. These indolent infiltrations of the inner surface of the larynx are of a normal colour; they are only somewhat duller, drier and less smooth than the healthy mucous membrane. They tolerate the galvano-cautery to an extraordinary degree.

It seems to me desirable in such cases to combine the galvano-caustic treatment with the daily application of lactic acid, and to continue this latter for several weeks after apparent healing. In all these cases the subjective symptoms were either slight or completely absent; the general health was extremely good. The course of the disease was essentially slow. The vocal cords were intact, and there was no discharge.

Dr. F. F. MICHELSEN (Amsterdam). *A New Method of Treating Hysterical Aphonia, etc.*

Instead of the name hysterical aphonia the author prefers to adopt that of nervous aphonia, because the affection occurs in patients who are not hysterical—for example, after frights or after recovery from catarrh of the larynx. The method which he has employed for the last eight years is a psychical one, and consists in introducing the finger into the nasopharynx, as if for the adenoid operation, after a certain show of preparation as though some serious form of operation was going to be carried out. This manipulation often causes considerable excitement. Then very probably the fear occasioned brings about reflexly the return of the voice. After the patient has ceased shouting, he is made at once to count in a loud voice and then to go away. The advantages of this method are the cito and the tuto, not the jucunde. Any practitioner can carry it out, and the results in practice have been found to be most satisfactory—first in nervous aphonia; secondly, in patients with hysterical aphonia and adenoid vegetations; thirdly, in paræsthesia. On the other hand, the result was less good, first, when it had already been tried before; secondly, in hysterical simulation; and thirdly, in apathetic hysterical subjects who do not react, such as is often the case in atrophic pharyngitis.

Dr. H. ZWAARDEMAKER (Utrecht).

(A) *Qualitative Defects of the Olfactory Sense, and a Clinical Method for their Detection.*

In the few cases in which observations have been made the sensation for certain smells has been absent—for example, in some for vanilla, mignonette—without the sense of smell for any other things being affected; these partial defects of smell have a great analogy to the insular tone-defects of otology, as also with colour blindness. It is only possible to accumulate a few accidental observations, and we are not in a position to recognize completely all the departures from the normal in this particular sense. It is necessary to experiment methodically. Unfortunately, we do not as yet possess a natural classification of smell, but the writer has endeavoured to put into a natural statement the “*novum systema odorum*,” which in the last century was undertaken by Linné for the drugs then in use. With the new chemical preparations in view two classes have been added, so that the whole number now amounts to nine. The classes have been revised, and in some respects subdivided, and both physiology and perfumery have been called upon with this view.

The nine classes are :—

1st. *Odores ætherei* (ethereal smells), e.g., acetic and butyric ethyl ether.

2nd. *Odores aromatici* (aromatic odours, with several sub-classes), *e.g.*, camphor, aldehyde.

3rd. *Odores fragantes* (balsamic smells, with sub-classes), *e.g.*, keton, cumarin.

4th. *Odores ambrosiaci* (amber smell, with two sub-classes), *e.g.*, musk, trinitro-butyl-toluol.

5th. *Odores alliacei* (allyl, kakodyl smell, with three sub-classes), *e.g.*, sulphide of ammonia, ichthyol.

6th. *Odores empyreumatici* (empyreumatic smells, tar, creosote).

7th. *Odores hircini* (caprylic smells), *e.g.*, lactic acid, butyric acid.

8th. *Odores tetri*. (odeurs represents), *e.g.*, coriander seed, opium.

9th. *Odores nauseosi* (sickening smell), *e.g.*, scatolwood (*anagyris foetida*).

Specimens were laid before the assembly, and a monograph upon the subject in question was presented, which will be published in 1895.

(B) *Gradenigo's Field of Audition.*

I have completed Gradenigo's field of audition to the upper and lower limits. This was done in the following way, on a system of co-ordinates :—The different tones of the human scale were marked off on the axis of the abscissæ. If a millimètre is made to stand for each half-tone, the whole scale measures in youth 132 millimètres, in old age less. (*See* "Zeitschr. für Psych. und Phys. der Sinnesorgane," Bd. VII. s. 10). On the axis of the ordinates the amount of auditory acuity is set off, and this being determined at several points of the scale by means of tuning forks. (*See* "Zeitschr. für Ohrenheilkunde," Bd. XXIV.). The space which is marked off by the axis of the abscissæ and the points of the ordinates gives a representation of the auditory field, whose size is the measure of the scummed auditory acuity. I show a number of such auditory fields which belonged to three different classes.

(a) Those of patients with *sclerosis of the middle ear*. The upper tones are well preserved, but the lower octaves almost entirely lost. When the disease extends to the oval window the high tones suffer also.

(b) *In affections of the labyrinth*, where the facts generally known were confirmed.

(c) In extensive destruction of the *membrana tympani*. These present very remarkable analogy with the auditory field of sclerosis, but at the same time some interesting differences.

This mode of investigation ought to be prosecuted still further. In every case the hearing should be tested by means of the harmonium—for the lower range with Moos-Appunn's tuning-forks, and for the upper one with Koenig's rods—so that hiatuses may be detected.

Dr. W. SCHUTTER (Groningen).

(A) *A Case of Congenital Atresia of the Choana.*

A plaster cast of the external nose, the choana and the upper jaw of a man fifty-nine years of age, with congenital atresia of the right choana, was shown. It could be seen that the right nasal cavity was smaller in both directions than the left. The left ala nasi bulged, the right one sunk in.

From the cast of the choana it was seen that the atresia lay one centimètre in front of the plane of the choana. Its superficial extent was smaller than the choana, and, therefore, the space was somewhat funnel-shaped. The distance from the Eustachian tube was twenty-four millimètres, and the septum was in the middle line. The height of the choana was on the left side seventeen, and on the right twenty millimètres; the width on the left side ten, and on the right eight. The lower border of the choana was deeper on the right than on the left side. The narrowing of the right choana was due to an abnormal and inward displacement of the lateral wall (of the choana). The palate was more arched than normal, the jaw slightly elliptical, the dental "bite" complete and regular. During the period of second dentition the passage of the nose must have been quite unobstructed. The skull was very symmetrical. From all this it follows that the results which Ziem attributed to closure of one side of the nose in the earliest years of life were quite absent in this case. By means of bipolar electrolysis through the nose the osseous atresia was perforated at one sitting, and since then the opening has got still wider. The cast of the naso-pharynx was taken, with the assistance of a dentist, after the application of cocaine, by means of gutta-percha on the end of a bent stalk.

Prof. GUYE had in a similar case made a good perforation under cocaine anæsthesia, and had employed india-rubber tubes in the after-treatment.

(E) *A Case of Diagnosed Bilateral Posticus Paralysis.*

The reader showed the larynx of a man who had suffered from inflammation of the throat in his thirteenth year, and had come to the polyclinic last year on account of stridulous breathing. Bilateral posticus paralysis with inspiratory adduction of the vocal cords was diagnosed. There was neither hyperæmia nor swelling. From the putrid bronchitis associated with this paralysis, it was assumed that the recurrent nerves were compressed by enlarged lymphatic glands. Tracheotomy was performed with good results. The patient died a year afterwards of erysipelas. This specimen showed distinct narrowing of the trachea, and of the œsophagus immediately below the cricoid cartilage. Below this cartilage, and somewhat to the right side, there was an oval perforation between the œsophagus and the trachea of from one half to three-quarters of a centimètre in size, the two tubes having become attached. The mucous membrane of the trachea and the œsophagus was drawn into pleats round this perforation. Immediately above the fistula there hung in the œsophagus a small mucous growth, which had completely closed the fistula. It was obvious that this condition prevented food from entering the air tubes during life. There was no manifest atrophy of the muscles of the larynx. The interference with the abduction of the vocal cord was, therefore, simply due to mechanical fixation of the arytenoids.

Dr. BURGER considered it strange that this fixation was not accompanied by any atrophy of the posticus muscles. Sidlo (*sic*) had some years previously described a similar case where abduction was

hindered by a cicatrix on the posterior walls of the larynx, but in that case the postici were atrophied. In the case communicated, the perverted movement of the vocal cords suggested the existence of posticus paralysis.

Dr. SCHÜTTER replied that no sign of atrophy had been found when the muscles were examined by Prof. Rotgans.

Dr. POSTHUMUS MEYJES stated the inspiratory adduction was simply due to insuction, as he had seen distinctly in two cases of bilateral posticus paralysis.

(c) *A Specimen of Syphilitic Disease of the Pharynx.*

This was a section from the margin of a pharyngeal ulcer, giving the appearance of a tubercular carcinoma. The patient, on the strength of this appearance, was sent home as inoperable, and treated *ut aliquid fiat* with insufflations of iodoform. The patient, however, got completely well, and the ulcer cicatrized. The preparation was again investigated by Prof. Reddingius, who further ratified the histological diagnosis of carcinoma. The writer still considered the case as syphilitic, and recommends strongly that in inoperable carcinoma, even when the microscopical examination seems to confirm that diagnosis, an anti-syphilitic treatment should not be omitted.

Dr. ZWAARDEMAKER considered that such therapeusis was not without its drawbacks, because, when carcinoma was certainly diagnosed, he held that specific treatment was contra-indicated.

Prof. PEL gave his opinion that in ulcerative processes in the mouth and throat, even with a negative result from specific treatment, the greatest precaution was necessary in regard to diagnosis. He had treated a girl with extensive destructive process in the mouth and pharynx, where, after the continued use of large doses of iodine, the diagnosis of tuberculosis was established, but in whom, at a later period, a few mercurial injections brought about a striking recovery with extensive cicatrization.

Dr. SIKKEL remarked that the opposite had also been observed, namely, that where mercury had left one in the lurch, iodide of potassium brought about healing. He recommended alternate treatment with both remedies.

Dr. TEN SIETHOFF remarked that in those places where pavement epithelium was present, the microscopical diagnosis was often accompanied by the greatest difficulty. Growths from this epithelium bore a very deceptive resemblance to carcinoma. He had seen sections of portions removed from tuberculous larynges, which gave absolutely the picture of carcinoma; further, pachydermia could easily be mistaken for malignant diseases.

Dr. SIKKEL (Utrecht).

(A) *A Case of Carcinomatous Lymphoma:*

This occurred in a peasant woman, aged forty-six, who had for a long time suffered from headache, nasal obstruction, and epistaxis, and was weak and thin. The left nostril was completely filled by a pinkish-red mulberry-like mass, which bled easily, and which appeared to arise from

the septum. In the right nostril there was seen on the septum a small, sharply-circumscribed growth. A fragment was removed from the left side, and on it Dr. de Haan found quite typical epithelium cells, along with many lymph cells, which gave the growth a mixed character. The growth was removed by means of a hot snare, and although this was very easy upon the right side, very considerable hæmorrhage took place upon the left. Later it was found that the septum was perforated, and the mucous membrane of the floor of the nose affected. With a circular knife attached to a dental engine, a sharp spoon, the galvano-cautery, and the chisel, as much as was thought necessary was removed. On both sides there remained a narrow margin of septum. The after-treatment lasted for about six weeks, after which the patient was very much better, and had increased in weight. After ten weeks no recurrence took place.

(B) *Bilateral External Otitis.*

A girl, aged nine, after typhoid fever, had hæmorrhage from both ears. Two days afterwards there was a high degree of deafness, and in both meatuses, on the auricle, and on the head there were innumerable furuncles. These were incised, the meatuses were treated with iodoform gauze, and the head with sublimate. Further furuncles occurred in the groin. Three weeks later the patient recovered with normal hearing.

(C) *A Foreign Body in the External Meatus.*

This was a cherry-stone removed from the meatus of a girl aged twenty-two, where it had been for fifteen years without causing any discomfort, but then at last gave rise suddenly to unbearable pain in the ear. It was seated very deeply, and the instruments then at disposal were not suitable for its removal. Dr. SIKKEL, therefore, had a special instrument prepared, which consisted of a tube at the end of which was a small funnel. The broad free extremity of this funnel was furnished with a plate of caoutchouc kept in position by means of a small funnel: the instrument was dipped in oil and then placed over the cherry-stone. By means of suction through the tube the object was displaced so far outwards as to make it accessible to ordinary instruments, by which it was then readily extracted.

Dr. E. G. A. TEN SIETHOFF (Deventer).

(A) *Reflex Epilepsy of Nasal Origin.*

The first case was one of a man, thirty-eight years of age, who had suffered from epilepsy for twenty years. The attacks became more frequent and longer in duration, and they were accompanied by complete loss of consciousness, biting of the tongue, and tonic spasms of the extremities. On microscopical examination there was found hypertrophy of the lower and middle turbinated bodies, and a crest on the cartilaginous septum. Cocaine was prescribed in ten per cent. solution, which the patient's wife learnt to apply inside the nose, and with which it was possible at any time to cut short the attack. In view of this effect the nasal mucous membrane was treated by means of the galvano-cautery. The result was that for two years the attacks did not recur, and the patient now enjoys undisturbed good health.

The second patient was a man, thirty years of age, who appears for a long time to have suffered from mild attacks of epilepsy, but in January, 1892, became the subject of his first severe seizure, which set in with a sensation of fœtor, and in which he fell downstairs. The subjective fœtor lasted for a week. Since that time he had similar attacks, at first every five, and then every three weeks, which always commenced with the olfactory aura, lasting on an average for four days. Along with it there was anosmia. The right half of the nose was completely filled with swollen mucous membrane. On the application of cocaine for the sake of investigation, suddenly the facial expression of the patient changed, and he stated that the smell had as suddenly left him. The right lower turbinated body was hypertrophic, and had become attached to the septum in its whole length. The breadth of this synechia was two millimètres; the middle turbinated body was also hypertrophic and attached to the septum in its posterior part. Upon this latter, at a somewhat higher level than the inferior turbinal, there was a circumscribed soft swelling. The hypertrophies and the synechia were removed. After this the condition of the nose became normal and the epilepsy totally disappeared. Only from time to time the patient has repetitions of the old smell, and his general condition has totally altered.

(B) *A Naso-Pharyngeal Polypus.*

This was removed from a boy aged thirteen, and measured 7·5 by 5 centimètres. On microscopical examination it was found to consist of an adenoid connective tissue growth covered with numerous layers of stratified and ciliated epithelium. The patient had been unable to sleep for a year and a half, being frightened by the dropping of the tumour into the larynx. Stimulation of the epiglottis by means of the probe caused no reflex, obviously because the spot was accustomed to irritation. The naso-pharynx was completely filled with the growth. Its origin seemed to have been the posterior part of the right middle turbinated body, and was removed by means of a galvano-caustic snare passed through the nose, and pushed up over the tumour from the mouth. In addition fifty polypi were also removed from the patient's nose.

Prof. GUYE. *Polypi in the Choana.*

Choanal polypi should only be removed by means of the cold snare, the same as nasal polypi, and not by means of the galvano-cautery, because the galvano-caustic snare, as a rule, only removes a portion of the growth, and leaves the largest part behind. In operating upon choanal polypi, in most cases bi-manual extraction is the best method.

Prof. Guye pushes Wilde's snare through the nose, and then introduces the right forefinger through the mouth into the naso-pharynx, when, without difficulty, the snare is found and made use of to remove a portion of the polypus. The snare is then tightened by means of the other hand, and the polypus extracted. This method has almost always succeeded, even in cases where other practitioners, after frequently repeated endeavours by means of the galvano-caustic snare, have only removed small fragments. He then showed several choanal polypi which had been removed in this way.

The only case in which this method had failed was one of a hard, smooth, rounded polypus situated on the posterior margin of the septum, because the snare slipped off the smooth posterior surface of the polypus each time, but one day he was able during digital palpation to loosen its insertion on the posterior border of the septum, and the tumour was then ejected by the patient through his mouth. For such cases Prof. Guye had designed a snare guide, consisting of a flexible silver probe, the blunt end of which was provided with a rounded hollow (? a kind of blunt hook), with which the snare can be seized and manipulated. This little hook serves to overcome another, though rare, difficulty—namely, where, on tightening, the wire slips off the polypus, although one thinks that one has caught it in the loop. The hook is provided with a screw, which can be fixed into the tumour. Then, while the snare is being tightened, the screw is at the same time pulled so that the polypus is prevented from slipping out.

Dr. POSTHUMUS MEYJES. *An exceptionally large Pharyngeal Tonsil.*

This was removed *in toto* by means of Gottstein's knife from a boy seven years of age. Even after being kept in spirit it still measured 17 by 22 by 29 millimètres, and weighed five grammes.

Dr. MEYJES also exhibited several *Tubes for Use in the After-Treatment of the Alveolar Perforation of the Antrum.*

Dr. A. C. H. MOLL (Arnheim). *An Improved Otoscope.*

The portion intended to be inserted in the patient's ear was made of glass, and consisted of two parts. The olive-shaped portion could very easily be extracted from the other, and it could be easily disinfected. The surgeon should have a large number of these, so as to have a fresh one for each patient.

He also exhibited a *Chisel for Stacke's Operation*—namely, for the removal of the outer wall of the Attic. He had attached to Stacke's chisel a movable right-angled handle.

Dr. ZWAARDEMAKER, in the name of the Society, proposed a vote of thanks to the President, and it was determined to hold the next meeting at Arnheim.

H. Burger.

(Dundas Grant, Trans.)

NOTES.

**PROGRAMME of the SEVENTEENTH ANNUAL CONGRESS
of the AMERICAN LARYNGOLOGICAL ASSOCIATION,**
To be held in Rochester, New York, June 17th, 18th, and 19th, 1895.

Monday, June 17th.

President's Address. By JOHN O. ROE, M.D., Rochester.

PAPERS.

- I. Foreign bodies in the œsophagus. HARRISON ALLEN, M.D.
- II. Desiccated thyroids in goitre. E. FLETCHER INGALS, M.D.
- III. The influence of chronic diseases of the throat upon certain defects of speech. D. BRYSON DELAVAN, M.D.
- IV. Electrolysis by a current controller for the reduction of spurs of the nasal septum. W. E. CASSELBERRY, M.D.
- V. Is acute tonsillitis in any way dependent upon the rheumatic diathesis? GEO. B. HOPE, M.D.

Presentation of Instruments.

Election of Fellows.

Evening: President's Reception.

Tuesday, June 18th. Session at 10 o'clock.

Business Meeting.

PAPERS.

- VI. (a) Some remarks on removal of the tonsils. (b) A case of lipoma of the larynx. J. W. FARLOW, M.D.
- VII. (a) A case of melancholia cured by intra-nasal operation. (b) A case of suppurative ethmoid disease, followed by invasion of the sphenoidal sinus, abscess of the brain and death. F. H. BOSWORTH, M.D.
- VIII. A consideration of some of the more important principles of intra-nasal surgery. W. K. SIMPSON, M.D.
- IX. Ludwig's angina. J. E. NEWCOMB, M.D.
- X. Discussion. Tuberculosis of the upper air-passages. Etiology: JONATHAN WRIGHT, M.D. Diagnosis: C. C. RICE, M.D. Treatment: E. L. SHURLY, M.D., and J. W. GLEITSMANN, M.D.

Annual dinner of the Association at 7.30 p.m.

Wednesday, June 19th. Session at 10 o'clock.

- XI. Cyst of the maxillary sinus. CHARLES H. KNIGHT, M.D.
- XII. A case of abscess of the frontal, ethmoidal and maxillary sinuses. J. H. BRYAN, M.D.

XIII. (a) Necrosis of the middle turbinate. (b) Congenital osseous stenosis of the naris. A. B. THRASHER, M.D.

XIV. (a) A naso-pharyngeal cyst. (b) An oro-pharyngeal cyst. (c) Fibroma papillare, or true papilloma, of nasal septum. JONATHAN WRIGHT, M.D.

XV. Discussion. The relation of vaso-motor disturbances to diseases of the upper air-tract. F. H. BOSWORTH, M.D. ; W. H. DALY, M.D. ; J. N. MACKENZIE, M.D.

OFFICERS, 1894-95.

President—JOHN O. ROE, M.D. (Rochester).

First Vice-President—C. C. RICE, M.D. (New York).

Second Vice-President—S. H. CHAPMAN, M.D. (New Haven)

Secretary and Treasurer—CHAS. H. KNIGHT, M.D., 147 W. 57th Street, New York.

Librarian—J. H. BRYAN, M.D., Washington, D.C.

Council—W. C. GLASGOW, M.D. (St. Louis) ; S. W. LANGMAID, M.D. (Boston) ; M. J. ASCH, M.D. (New York) ; D. BRYSON DELAVAN, M.D. (New York).

THE FLORENCE CONGRESS OF OTOLOGY.

WE are requested to state that the invitation to English otologists to participate in this Congress in September has been poorly responded to, and that the Secretary will gladly receive notice of the intention of any English specialists to contribute to the proceedings.

The subjects for discussion have already been announced for a long time, and are as follows :—

The Treatment of Intra-Cranial Abscess subsequent to Purulent Disease of the Middle Ear. Dr. THOS. BARR (Glasgow).

General Treatment in Diseases of the Ear. Dr. GELLÉ (Paris).

General Treatment in Internal Ear Disease. Prof. GRADENIGO (Turin).

The Present State of the Pathology of the Labyrinth. Prof. POLITZER (Vienna).

On the Physiology of the Middle Ear. Dr. CARLO SECCHI (Bologna).

Prof. GRAZZI (Borgo dei Greci, No. 8) will be glad to receive the titles of any communications.

HEYMANN'S HANDBOOK OF LARYNGOLOGY.

THE following list of contributors to this work is additional to that previously announced in this Journal : Primarius Dr. CATTI (Fiume) ; Prof. EINTHOVEN (Leiden) ; Prof. Dr. Hausemann (Berlin) ; Dr. W. KÜMMEL (Breslau) ; Prof. SCHECH (München) ; Dr. Felix Semon (London) ; Dr. SPIESS (Frankfurt-a-M.)

THE
JOURNAL OF LARYNGOLOGY,
RHINOLOGY, AND OTOTOLOGY.

VOL. IX.

JULY, 1895.

No. 7.

Original Articles are accepted by the Editors of this Journal on the condition that they have not previously been published elsewhere.

Twenty-five reprints are allowed each author. If more are required it is requested that this be stated when the article is first forwarded to this Journal. Such extra reprints will be charged to the author.

The Editors are not responsible for opinions expressed in original Articles or Abstracts in this Journal.

Editorial Communications are to be addressed to "Editors of JOURNAL OF LARYNGOLOGY, care of F. J. Rebman, Albion Chambers, 11, Adam Street, Strand, London, W.C."

**On the FORMATION of SALIVARY CALCULUS over the
INFERIOR INCISORS, caused by habitual
MOUTH-BREATHING.¹**

By PROF. GUYE (Amsterdam).

Navita de ventis, de tauris narrat arator, is what some of my hearers will have said, seeing that I was going to speak on mouth-breathing. But I have no intention of bringing before you once more, not even in outline, the many dangers resulting from mouth-breathing. I did that some years ago, at the International Hygienic Congress at the Hague, in 1884, and others have done it before and after me. I only remind you of George Catlin's little book, "Shut your Mouth and Save your Life," and of Bloch's "Pathologie und Therapie der Mund-Athmung."² Nor will I enter now into the question, if it is right to regard mouth-breathing as Catlin did, as a bad habit the result of many causes related to civilization, which bad habit becomes the cause of a series of troubles and diseases, or if it is wiser to do like many of the rhino- and laryngologists of the present day, who simply mention mouth-breathing *en passant* as one of the consequences of impaired nasal respiration, and do not, as a rule, pay much attention to the fact that mouth-breathing, when once it has become a habit, is in itself the source of new troubles. I only wish for a moment to direct your attention to a pathological process, which is in my opinion a direct result of habitual mouth-breathing, and that is the formation of tartar on the outside of the inferior incisors.

Others, and among them the two authors mentioned above and myself, have already stated that mouth-breathing appears to be injurious

¹ Read in the Dutch Congress of Science and Medicine, Amsterdam, April, 1895.

² Wiesbaden: Bergmann, 1889.

to the teeth, probably because it exposes them to cold and to dryness. But I did not find any further particulars concerning the nature of that injurious influence either in medical or in dental literature, which Mr. Grevers had the kindness to place at my disposal.

Now what I have seen and demonstrated to my students again and again is the following. On depressing the lower lip with a spatula, and on looking at the inferior incisors in patients suffering from habitual mouth-breathing, you see nearly always—there are, of course, exceptions to the rule—near the gingival border of three or four incisors, and sometimes of one or both of the canines, a crust of tartar which presents all sorts of varieties in respect of dimensions, colour and consistency, but which, as a rule, absolutely fails in the other teeth, which are protected against desiccation by the mucous membrane of the cheeks and lips. Around this tartar the gums, as a rule, are more or less inflamed, swollen and sometimes prone to bleeding. This was the state of the patient whose teeth I made a photograph of, with the kind assistance of my friend Prof. Van Haren Noman, of which a reproduction is given.

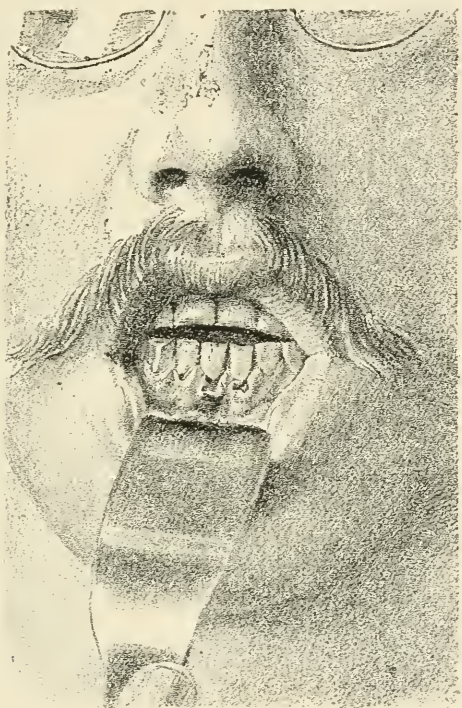
After I had removed the tartar the gums were soon quite in a normal state. When the process continues undisturbed the incrustation extends along the surface of the teeth downward, forces itself between the tooth and the alveolus, the border of which becomes atrophic and the tooth gets more and more loosened in its socket. Formerly, it was my habit to send such patients to the dentist to have the tartar removed; but my experience was that patients who care so little for their teeth that they have let it go so far, rarely follow our advice in this respect. For this reason I now often remove the tartar myself, and I have observed repeatedly that the teeth were so loose that I dreaded that in removing the tartar they would drop out of their sockets, and that when seeing the patient after a few weeks I found the teeth solid in their sockets.

To me the importance of the formation of tartar on the outside of the inferior incisors lies herein, that I consider it as a symptom, I should rather say as a stigma of mouth-breathing, in the same sense as Charcot, for example, has spoken of the stigmata of hysteria. When I see the typical condition from which the photograph has been taken, I make bold to affirm, even in patients who answer negatively my question if they sleep with their mouth open, that they do so or have done so formerly. *Ubi rerum testimonia adsunt, quid opus est verbis?* And nearly always the patients afterwards acknowledge that I was right.

But I also put the question to myself, what is the physiological rôle of tartar, and what is the reason why it is deposited in some places of election, and not in others?

Tartar consists principally of phosphate and carbonate of lime, which are precipitated from the saliva and form incrustations on the teeth. According to some authors, as Gallippe and Klebs, bacteria and leptothrix buccalis should stand in a causal relation to this precipitation, but Miller in his book, "*Die Mikroorganismen der Mundhöhle*,"¹ says that this is not proved, and considers it as doubtful. According to him, these lime-salts are held in solution in the saliva by an excess of carbonic acid, and when

¹ Leipzig, 1889.



the saliva is poured into the mouth it loses part of its carbonic acid, and the lime-salts are precipitated. This is in accordance with the experience of Hoppe Seyler, who found that clear saliva being exposed to the air gets opaque by the carbonate of lime becoming insoluble.

What are now the places of election where tartar is principally found? There are three such places, according to my own observations and to what is found in the text-books of dentistry :

1st. The labial surface of the inferior incisors ;

2nd. The lingual surface of the same teeth ; and

3rd. The buccal surface of the superior molars, especially when these are more or less carious.

As to the first of these three places, it is clear that when mouth-breathing has been continued for some time the saliva must be concentrated in that place by desiccation, and that it will lose at the same time its superfluous carbonic acid. But, nevertheless, I have not found in any of the works on dentistry which were at my disposal any mention of the obvious fact that this place of election for tartar is so especially, if not exclusively, in persons who sleep with their mouth open ; and it is my opinion that dentists will do well to pay attention to this side of the question, and on account of that to warn their patients against the dangers of sleeping with their mouths open.

The second place of election for tartar is the lingual surface of these same teeth. That is the place where, according to the experiments made by Donders and Mezger in 1875,¹ when the mouth is shut, there is formed a space with rarified air, which explains how the lower jaw is kept in its place by atmospheric pressure, without any constant contraction of muscles. The tip of the tongue in the state of rest is placed against the inner surface of the upper incisors, and at the bottom of the mouth is now formed the space with rarified air above alluded to. When the mouth remains for some time in that state, saliva is collected here, the superfluous carbonic acid escapes and lime-salts are deposited. This is the place where, in the majority of cases in normal conditions, the dentist finds an abundance of tartar, which in some persons becomes troublesome, and has to be removed.

The third place of election, the buccal surface of the molars, is so in fact exclusively when one or more teeth on that side of the mouth are carious, or from one cause or another this side is not used in mastication. Some authors explain the presence of tartar in this place through the circumstance that here the mouth of the ductus Stenonianus is found. Dentists lay the greatest importance on the disuse of that side of the mouth where mastication is painful. I have seen cases where one molar was covered over with tartar, whereas the neighbouring teeth were completely free. By percussion it appeared that this molar was sensitive and carious. Now, if the appearance of tartar on this side depended only on disuse, why were the other teeth exempt?

I should not be surprised that in these cases the presence of micro-organisms, which play an important rôle in caries, also have some influence on the production of tartar. However, I leave this question for further

¹ Pflüger's Arch. für der Ges. Physiologie, 1875, s. 89.

research to dentists. I will cite one case from dental literature which illustrates forcibly the deleterious influence of tartar.

Bastyr relates in the "Handbuch der Zahnheilkunde," edited by Julius Scheff, jr.,¹ the case of an intelligent young lady, who had attempted suicide, because surgeons had repeatedly resected the gums of the lower jaw, but without success, as the gums in a few days again covered the teeth entirely. Bastyr removed small particles of tartar, and purposely left the gums as they were. After a few days the fungous growths of the gums had disappeared, and now presented a normal condition.

It was my purpose in this paper to call your attention to the formation of tartar in the first place of election, viz., the labial surface of the lower incisors, and to impress on you, and dentists in particular, the importance of not only removing the tartar, but also of combating its cause, and inducing patients to sleep with their mouths closed. Some years ago, speaking on aprosexia nasalis,² I made a paraphrase on the motto of George Catlin "Shut your mouth and save your life," by saying "Shut your mouth and save your brain." The result of my observations, which I have presented to you to-day, make me say, "Shut your mouth and save your teeth."

THE BRITISH LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL ASSOCIATION.

SEVENTH ANNUAL SUMMER MEETING.

July 25th and 26th, 1895.

President—Dr. W. McNEILL WHISTLER.

Vice-Presidents—Dr. ED. WOAKES; Dr. R. A. HAYES; Mr. MAYO COLLIER.

Council—Dr. ED. LAW; Dr. DUNDAS GRANT; Dr. F. MATHESON; Dr. R. N. WOLFENDEN; Dr. J. MACINTYRE; Dr. BARCLAY BARON; Mr. F. MARSH.

Honorary Secretary—Dr. L. H. PEGLER.

Honorary Fellows—Dr. FRANCKE BOSWORTH (New York); Dr. FAUVEL (Paris); Dr. SOLIS COHEN (Philadelphia); Prof. MASSEI (Naples); Prof. VON SCHROETTER (Vienna).

PROGRAMME OF MEETINGS.

Royal Medical and Chirurgical Society's Rooms, 20, Hanover Square, W.

Thursday, July 25th.

10 a.m.—General business.

10.30 a.m.—President's Address.

11 a.m.—Discussion on the "Surgical Treatment of the Accessory Cavities of the Nose," introduced by Dr. LUC (Paris), Dr.

¹ Wien, 1892, Vol. II., Part II., p. 596.

² JOURNAL OF LARYNGOLOGY, 1889, p. 499.

BRYSON DELAVAN (New York), Dr. JOHN N. MACKENZIE (Baltimore), Dr. F. H. BOSWORTH (New York).

3 p.m.—Discussion on the “Treatment of Chronic Laryngeal Stenoses,” introduced by Dr. SAJOUS (Paris).

Friday, July 26th.

10 a.m.—Exhibition of cases.

11 a.m.—Discussion on the “Therapeutics of Diphtheria, with special reference to Antitoxin,” introduced by Dr. G. SIMS WOODHEAD, Prof. C. S. SHERRINGTON.

3 p.m.—Discussion on the “Surgical Treatment of Laryngeal Tuberculosis,” introduced by Dr. HERYNG (Warsaw), Prof. KRAUSE (Berlin), Dr. GLEITSMANN (New York).

Dr. C. H. KNIGHT (New York), Dr. W. H. DALY (Pittsburg, Pa.), Dr. GRUNWALD (Munich), Prof. GUYE (Amsterdam), Dr. P. MEYJES (Amsterdam), Mr. LENNOX BROWNE, Dr. J. MACINTYRE, Dr. R. N. WOLFENDEN, Dr. DUNDAS GRANT, Dr. HUNTER MACKENZIE, Dr. ARTHUR SANDFORD, Dr. ED. LAW, Mr. MAYO COLLIER, Dr. WILLIAM HILL, Dr. F. MATHESON, Dr. J. D. HILLIS, Dr. W. MILLIGAN, Mr. R. LAKE, Dr. GEORGE STOKER, and others will take part in the discussion.

Papers on the above subjects have been promised from Dr. MOURE (Bordeaux), Dr. GUYE (Amsterdam), Prof. MASSEI (Naples), Dr. ZIEM (Dantzig), Dr. J. SOLIS-COHEN (Philadelphia).

A deputation from the American Laryngological Association will officially visit the Meeting, and other Fellows of the American Association have intimated their intention of attending. These and other distinguished foreign guests will be entertained by the President (Dr. WHISTLER) at a Reception on the evening of July 25th, by the Association at Dinner on July 26th, and by Dr. NORRIS WOLFENDEN at a Garden Party on Saturday, July 27th.

BRITISH MEDICAL ASSOCIATION.

K. OTOTOLOGY.

Room 22—King's College.

President—Sir W. DALBY, F.R.C.S.

Vice-Presidents—CHARLES WARDEN, M.D.; G. P. FIELD, M.R.C.S.; E. CRESSWELL BABER, M.B.; J. DUNDAS GRANT, M.D.; EDWARD LAW, M.D.; C. A. BALLANCE, F.R.C.S.

Honorary Secretaries—C. E. L. B. HUDSON, F.R.C.S., 16, Harley Street, W.; G. C. WILKIN, L.R.C.P., 39, Weymouth Street, W.

Thursday, August 1st: Discussion on Cerebral Complications in relation to Middle-Ear Disease. Opened by Prof. MACEWEN, M.D., C.M., F.R.S., LL.D., Regius Professor of Surgery, University of Glasgow.

The Section has also arranged to hold a discussion on the Treatment of Nerve Deafness. Particulars of this will be announced later.

Papers will be contributed and specimens exhibited by the following amongst others:—

COUSINS, J. WARD, M.D., F.R.C.S. On the Use of Artificial Tympanic Membranes.

JONES, CARMALT, F.R.C.S. On Turbinotomy in Cases of Deafness and Tinnitus Aurium.

LAKE, RICHARD, F.R.C.S. On the Anatomical Connections of the Tympanic Membrane, with a few remarks on their pathological importance. Specimens will be exhibited to illustrate this paper.

SCATLIFF, J. M. E. On the Use of the Pneumatic Speculum in the Treatment of Diseases of the Ear.

M. LARYNGOLOGY.

North Room, Ground Floor—Conjoint Examination Hall.

President—FELIX SEMON, M.D.

Vice-Presidents—Sir PHILIP SMYLY, M.D.; W. MACNEILL WHISTLER, M.D.;
F. DE HAVILLAND HALL, M.D.; GREVILLE MACDONALD, M.D.
SCANES SPICER, M.D.; A. W. SANDFORD, M.D.

Honorary Secretaries—J. MIDDLEMASS HUNT, M.B., 55, Rodney Street, Liverpool; ST. CLAIR THOMSON, M.D., 28, Queen Anne Street, W.;
E. B. WAGGETT, M.B., 66, Park Street, Grosvenor Square, W.

The following subjects have been selected for discussion:—

Wednesday, July 31st: The Etiology of Mucous Polypi of the Nose, introduced by Prof. GUYE (Amsterdam), Dr. LUC (Paris), and Dr. MCBRIDE (Edinburgh).

Thursday, August 1st: The Infectious Nature of Lacunar Tonsillitis, introduced by Prof. B. FRAENKEL (Berlin) and Dr. J. MACINTYRE (Glasgow).

Friday, August 2nd: The Indications or Early Radical Operation in Malignant Disease of the Larynx, introduced by Dr. BRYSON DELAVAN (New York) and Mr. H. T. BUTLIN (London).

The following members have expressed their intention of joining in the discussions:—

T. MARK HOVELL, F.R.C.S.Ed., R. LAKE, F.R.C.S., L. H. PEGLER, M.D., A. HODGKINSON, M.D. (Manchester), W. MILLIGAN, M.D. (Manchester), and CHARLES WARDEN, M.D. (Birmingham), on July 31st. T. MARK HOVELL, F.R.C.S.Ed., A. HODGKINSON, M.D., CHARLES WARDEN, M.D., and WATSON WILLIAMS, M.D. (Bristol), on August 1st.

PHILIP DE SANTI, F.R.C.S., A. HODGKINSON, M.D., and CHARLES WARDEN, M.D., on August 2nd.

The following papers have been announced :—

DE SANTI, PHILIP, F.R.C.S. The Operation of Thyrotomy, with a short account of the cases in which it has been performed at St. Bartholomew's Hospital during the last fifteen years.

HODGKINSON, ALEXANDER, M.D. (Manchester). (1) A new form of Magnifying Laryngoscope ; (2) On the Vibrations of the Vocal Cord ; (3) On Chorditis Tuberosa ; (4) On the Function of the Laryngeal Ventricle.

MILLIGAN, WILLIAM, M.D. (Manchester). Vocal Defects among School Board Teachers, with special reference to the occurrence of teachers' nodes.

SMYLY, Sir PHILIP. A Case of Non-Diphtheritic Diphtheria.

The following gentlemen purpose being present and taking part in the work of the Section :—

Prof. FRAENKEL, Prof. GUYE, Dr. LUC, Dr. BRYSON DELAVAN, Prof. MORITZ SCHMIDT (Frankfort), Dr. WALKER DOWNIE (Glasgow) and Dr. HILLIS (Dublin).

ABSTRACTS.

DIPHTHERIA, &C.

Percepied.—*Benign Diphtheritic Anginas*. "Normandie Méd.," May 15, 1895.
THE author believes some diphtheritic anginas are benign, and similar to the pultaceous sore throat, with similar evolutions and symptoms. The true nature is only disclosed by bacteriological examination of the white patches and pseudo-membranes. Two cases are related : in one, the diphtheritic bacillus was found in the saliva six weeks after the cure of the angina. *A. Cartaz.*

Fürst, L. (Berlin).—*Early Clinical and Bacteriological Diagnosis of suspicious Anginas*. "Berliner Klinik," 1895, No. 8.

THE diagnosis of diphtheria can be made by every experienced physician. In cases with decided clinical symptoms this diagnosis can be made, even if the bacteriological examination shows no specific bacilli, and the serum treatment should be employed in such cases as well as the necessary prophylaxis. *Michael.*

Thresh.—*The Value of Bacteriological Examination in Diphtheria*. "Lancet," Mar. 2, 1895.

DRAWS attention to the danger of placing too much reliance upon the negative results of bacteriological examination in diphtheria.

Gerber and Podack (Königsberg).—*On the Relation of so-called Primary Rhinitis Fibrinosa and of the so-called Pseudo-Diphtheria Bacillus to the true Klebs-Loeffler Diphtheria Bacillus*. "Deutsche Archiv für Klin. Med.," Band 54.

CAREFUL bacteriological researches in four cases in which a rhinitis fibrinosa, with pseudo-diphtheria bacilli, followed or preceded a true diphtheria, seem to prove

that the pseudo-diphtheria bacillus is a non-virulent form of the true diphtheria-bacillus.

Michael.

Goodall (London).—*Unusual Case of Diphtheria of the Air Passages.* Clinical Society of London, Mar. 1. "Lancet," Mar. 9, 1895.

THE case of a boy, aged nine years, suffering from faucial diphtheria. Casts of the trachea and bronchi were expectorated, but without any signs of laryngeal obstruction. At the end of three weeks there was paralysis of the palate, ciliary muscles and lower extremities. He made a good recovery. Three other cases were mentioned where casts were expectorated, with remarkably little dyspnoea or signs of laryngeal obstruction. Loeffler's bacillus was found in the faucial exudation.

Hayward (London).—*The Pathology of Diphtheria.* Pathological Society, Mar. 5. "Lancet," Mar. 9, 1895.

RECOMMENDS hydrocele fluid as medium for diphtheria cultures, the bacillus growing readily upon it, small white-coloured specks being apparent in twenty-four hours. It is inimical to the growth of many of the other organisms, especially staphylococcus aureus and albus.

Hunt, Bertram (London).—*Pathology of Diphtheria.* Adjourned Debate. "Lancet," Mar. 23, 1895.

Dr. WASHBOURNE referred to the action of oxygen on cultures favouring the production of toxin, alluding to the presence of living bacilli in the throat of patients long after the symptoms had subsided, and raising the question whether the bacilli were still secreting toxin, and if so whether they were being annulled *pari passu*.

Dr. SIMS WOODHEAD pointed out that if the action of oxygen in cultures could be limited to the bacilli themselves, without acting on the toxin, they would have the best condition possible: referred to the views of Roux and Viard, who, whilst maintaining that the toxic action was through the cells, in the production of antitoxin serum, showed that the action was very rapid, for by injecting toxin into a small animal, and taking the blood from the ear, a certain amount of antitoxin might be obtained at once. In conclusion he drew attention to the very varied form assumed by the diphtheria bacillus.

Mr. LENNOX BROWNE showed two specimens of the so-called pseudo-bacillus of diphtheria. In the second case the patient, three months after his recovery, having his tonsils removed, the surfaces became covered with a grey exudation, which on removal exposed a freely bleeding surface. A culture on serum showed short segmental bacilli, and, in eleven days, staphylococcus aureus only.

Beck and Stapa (Krakau).—*On the Influence of the Diphtheria Poison on the Blood Circulation.* "Wiener Klin. Woch.," 1895, No. 18.

By injection of diphtheria poison into rabbits the authors obtained the result that the introduction of the poison has no immediate influence on the circulation. Some hours later there suddenly arises decrease of the blood pressure, irregularity of the pulse for some minutes to half an hour, and ending with death. These experiments are in accordance with clinical observations. Here also is often observed sudden death by heart paralysis.

Michael.

Fürst (Berlin).—*Systematic Prophylaxis of Diphtheria.* "Klin. Zeit. und Streitfragen." Wien. 1894.

HEALTHY children should always clean the mouth and use tablets consisting of boric acid, salicylate of soda, chloride of sodium and saccharin. Physicians should

disinfect themselves with sublimate. Cases of diphtheria should be treated with energetic disinfection. *Michael.*

Vincent, A.—*The Cardiac Plexus in Diphtheritic Paralysis.* "Arch. de Méd. Expériment. et d'Anat. Pathol." "Lancet," Mar. 23, 1895.

POINTING out that myocarditis is not the only cause of cardiac failure during convalescence from diphtheria, that the cardiac plexus is frequently diseased, but that in the examination of the other nerve trunks its condition has been overlooked.

Alstin, H. (Trinidad).—*Is Paralysis after a Sore Throat a proof that the Disease was Diphtheria?*

MENTIONING a case of pseudo-diphtheria (unilateral septic follicular tonsillitis) followed by paralysis of soft palate.

Heintz (Berlin).—*Case of Bilateral Abducent Paresis without any other Disturbance of the Eyes, following Diphtheria.* "Allg. Med. Zeitung," 1895, No. 20.

CONTENTS indicated by the title.

Michael.

Samuel (Königsberg).—*From Vaccination to Antitoxin Treatment.* "Deutsche Med. Woch.," 1895, Nos. 18 and 19.

HISTORICAL review.

Michael.

Robertson, W. (London).—*The Immunization of Horses.* "Lancet," Mar. 23, 1895.

A PAPER read before the Pathological Society of London, March 19th, referring to the methods of immunization, the variable power of resistance to the action of the toxin, the amount drawn off at one time, and the quantity of serum obtained.

Klein, E. E. (London).—*The Theory and Practice of Protective Inoculation.* "Lancet," Mar. 16, 1895.

A LECTURE delivered at the London Institution on March 4th. The lecturer drew attention to the point elucidated by Behring that the blood-serum of an animal artificially immunized against diphtheria or tetanus not only possessed protective potency when injected into an otherwise susceptible animal, but cut short existing disease, the serum acting as a curative agent.

Farquharson.—*Antitoxin as a Patent Medicine.* "Lancet," Mar. 9, 1895.

A QUESTION asked in the House of Commons regarding the application for a patent for the supply of antitoxin in a concentrated form. Mr. Bryce replied that, apart from opposition, the patent would be granted in due course. The "Lancet" points out that the intending patentee is, they believe, a medical practitioner, and that such a procedure is unusual according to the traditions of the profession.

A Secret Remedy for Diphtheria. "Allg. Wiener Med. Zeitung," 1895, No. 21.

THE editor reproduces a curious letter sent to him concerning a Chinese medicine which is able to cure diphtheria in all cases. *Michael.*

Plant (Leipzig).—*Worth of "Ausstrichpräparate" for the Diagnosis of Diphtheria.* "Deutsche Med. Woch.," 1895, No. 18.

"AUSSTRICHPRÄPARATE" and experiments on animals are indispensable for the scientific diagnosis of diphtheria. *Michael.*

Fraser, T. R. (Edinburgh).—*The Storage of Antitoxin.* "Lancet," Mar. 9, 1895.

RECOMMENDS that the liquid antitoxin should be evaporated *in vacuo* over sulphuric acid and stored in the form of a dry powder.

Chaillou.—*Antitoxin and Intubation in Diphtheritic Croup.* Thèse de Paris, 1895.

EXCELLENT review and plea in favour of intubation in diphtheritic croups. The author gives a detailed account of the operative technique, and of measures to take for preventing complications. The intubation must absolutely, except in rare cases, be substituted for tracheotomy. The statistical results of Chaillou are twelve deaths only in forty-nine cases of intubation. *A. Cartaz.*

Report on Injections of Antitoxin for the Treatment of Diphtheria and for Immunization in Croatia and Slavonia from August 1st, 1894, to January 31st, 1895, inclusive. "Wiener Med. Woch.," 1895, No. 18.

FOUR hundred and twenty-eight cases were treated; of those three hundred and eighty-two were cured, and forty-six died (equal to 10·8 per cent.). In seven hundred and forty-seven children prophylactic injections were made; of those seventeen acquired diphtheria, and one died. In other years the mortality was from forty to sixty-five per cent. The Government recommends further treatment with antitoxin. *Michael.*

Janowsky (Warsaw).—*Comparative Experiments on Behring's and Roux's Antitoxin.* "Centralbl. für Bakteriologie und Parasitenkunde," Band 1895, Nos. 7 and 8.

THE results of the author's researches are that Behring No. 1 and Roux are of nearly equal efficacy. Aronsohn's serum is equal to Behring's No. 2. Only one number is produced by Roux and Aronsohn. *Michael.*

Altmann (Königshutte).—*Antitoxin Treatment in Diphtheria.* "Deutsche Med. Woch.," 1895, No. 14.

OUT of nineteen cases two died. *Michael.*

Baginsky and Katz (Berlin).—*First Series of Cases of Diphtheria treated with Antitoxin (Aronsohn).* "Archiv für Kinderheilk.," Band 18, Heft 5 and 6.

EXTENSIVELY communicated histories of the disease in one hundred and sixty-seven cases. The concluding results are known from former publications of the authors. The details must be seen in the original. *Michael.*

Leasser (Mannerstadt).—*Treatment of Diphtheria with Behring's Antitoxin.* "Münchener Med. Woch.," 1895, No. 19.

REPORT on nine cases, which were all cured. In eight of these cases laryngeal symptoms had been observed. *Michael.*

Latham (Cambridge).—*Antitoxin Treatment of Diphtheria.* Cambridge Medical Society, Feb. 1. "Lancet," Mar. 9, 1895.

DESCRIBES the preparation of Behring antitoxin, and mentions five cases treated by it, in two of which the membrane extended into the trachea and bronchi, both patients recovering.

Miller, H. P. (London).—*Diphtheria treated by Antitoxin.* Œsculapian Society of London, Feb. 22. "Lancet," Mar. 9, 1895.

A CASE treated by antitoxin followed by tracheotomy. Membrane was coughed up from below the opening; albuminuria; tube removed on tenth day; satisfactory recovery.

Rosenbach (Breslau).—*Cure and Heilserum.* Berlin: Goldschmidt. 1894. 28 pp. POLEMICAL pamphlet against antitoxin. *Michael.*

Bokey (Budapest).—*My Results with Behring's Diphtheria Heilserum.* "Deutsche Med. Woch.," 1895, No. 15.

SEE the report of the meeting of the Budapester Aerzte Verein, February 5th, 1895. *Michael.*

Marsh, E. L.—*Diphtheria treated with Antitoxin.* "Glasg. Med. Journ.," Mar. and May, 1895.

ELABORATE report of twenty cases of diphtheria treated with serum in the Glasgow Fever Hospital. There were thirteen recoveries and seven deaths. The serum was supplied by the British Institute of Preventive Medicine.

Keferstein.—*Serum Treatment in Diphtheria.* "Allg. Med. Centralztg.," 1895, No. 14.

REPORT on six cases, which all recovered. *Michael.*

Rapmun (Muiden).—*Serum Treatment in Diphtheria.* "Zeitsch. für Medicinalb.," No. 4.

THE author treated 100 cases. The mortality was 7 per cent. of all, $12\frac{1}{2}$ per cent. of the grave cases. In other epidemics the mortality in Muiden was 20 to 30 per cent. *Michael.*

Buchholz (St. Petersburg).—*Serum Treatment in Diphtheria.* "St. Petersburg Med. Woch.," 1895, No. 5.

THE author treated seven cases. One of them died. *Michael.*

Romniciano.—*The Anti-Diphtheritic Serum Treatment; Complications.* "Mercredi Méd.," Apr. 24, 1895.

ROMNICIANO reports two cases: the first, one of stridulous laryngitis, treated by means of serum, owing to the difficulty of diagnosis of spasmodic or diphtheritic laryngitis. Two days after the injection, bilious vomiting, hematuria with dysuria, albuminuria.

In the second case, true diphtheria, a fortnight after the injections there were noted intense rheumatoid pains, as in articular rheumatism, with urticarial rash.

A. Cartaz.

Hunt, Bertram (London).—*The so-called Antitoxin Treatment of Infective Diseases, illustrated by Diphtheria.* "Lancet," Mar. 9, 1895.

THIS paper was read before the Pathological Society on March 4th. The author first dealt with the history of the treatment and the researches of Pasteur and Koch. He then divided the methods of protection into two classes, that of active or permanent immunity by the introduction of mitigated virus, and passive or temporary immunity by the injection of bacteria or their products into an animal, and the transfer of that immunity by the injection of the blood or serum from that animal.

He referred to the action of oxygen on toxin cultures. He enumerated the laws laid down by Behring for the process of immunization : (1) that it is necessary the animal should have recovered completely before repeating the injection ; (2) that the antitoxic value of the blood reaches its maximum coincident with the return of perfect health, and then falls to a constant level ; (3) that fresh injection of toxin was best made when the antitoxic value of the blood was at its highest ; (4) that the more susceptible the animal the greater the final immunity, and the more antitoxic the blood ; (5 and lastly) that it was possible to carry the immunization too far. He pointed out that from what we know of the action of antitoxin the law might be laid down that when disease is set up by any other form of life invading the animal organism, immunity to such disease would confer curative properties on the blood of the immune animal. The author referred to Pfeiffer's definition of antitoxin as being the specific proteids of the bacteria to which immunity had been attained, modified, and digested by the cells, and that whatever their chemical nature was they must be considered as derivations from such mycoproteids still possessing some of their specific nature, but of a wholly beneficent character. In conclusion, he drew attention to an essential factor in the prognosis, namely, the amount of degeneration of tissue present before treatment was begun.

Scholtmüller (Griefswald).—*Case of Wound-Diphtheria, with Diphtheria Bacilli, with contemporaneous existence of Diphtheria Bacilli in the Healthy Pharynx.* "Deutsche Med. Woch.," 1895, No. 17.

CONTENTS in the title.

Michael.

Hawkins, Cuthbert (Aberdovey).—*Sulphur v. Antitoxin.* "Lancet," Mar. 16, 1895.

IN reply to Mr. Lennox Browne, pointing out that it is of importance to know which of two remedies has the most effect on a disease, and claiming for sulphur an equal, if not a higher, position than antitoxin in the treatment of diphtheria.

Browne, Lennox (London).—*Sulphur v. Antitoxin.*

REPLYING to Mr. Cuthbert Hawkins, and acknowledging the undoubted value of sulphur, sulphite of magnesium, and iron, as auxiliaries in the treatment of diphtheria, and pointing out that after all it was not so much a question as to which individual drug had done the most good, as it was of the most rapid means of restoring the patient to health.

Stein (Moscow).—*Further Contributions on Application of Trichloroacetic Acid.* "Monats. für Ohrenheilk.," 1894, No. 1.

RECOMMENDATION of this medicament.

Michael.

Hecker (Munich).—*Diphtherial Mortality in the Greater Cities of Germany and in Vienna in the Years 1883 to 1893.* "Münchener Med. Woch.," 1895, No. 18.

EXTENSIVE and carefully-worked statistical review. Must be seen in the original.

Michael.

Gouguenheim.—*Diphtheria in Lariboisière Hospital; Treatment by sero-therapeutics.* "Bull. Soc. Méd. des Hôp.," Mar. 29, 1895.

BEFORE the introduction of this treatment the death-rate had been, in the author's wards, 10·37 per cent. in adults, and 57·5 per cent. in children (one hundred and thirty-nine cases in adults, with fourteen deaths ; forty in children, with twenty-

three deaths). With serum treatment the percentage is considerably modified : fifty-two cases in adults, two deaths ; forty-eight in children, nine deaths. After the injections of serum some exanthemata have been noticed ; the albuminuria was not badly influenced by that treatment. According to the author, diphtheria should be more frequent in adults than is ordinarily admitted, many cases of follicular amygdalitis having a diphtheritic origin, which cannot be diagnosed without bacterial examination.

A. Cartaz.

D'Astros, L., and Engelhardt.—*Diphtheria and Antitoxin Treatment at Marseilles*. "Bull. Soc. Méd. des Hôpit., Paris," Apr. 19, 1895.

THE statistical results are similar to the first given by Roux, Martin, Moizard, etc. From the 15th December to the 7th April the authors have treated ninety-six patients—twenty-three with pseudo-membranous anginas, seven coccus, one staphylococcus, six streptococcus, and eight cases of non-diphtheritic croup.

The seventy-three cases of true diphtheria are divided into :

Pure diphtheritic angina	...	...	26 cases, 5 deaths.
Diphtheria and coccus angina	...	...	2 „ 0 „
Diphtheria and staphylococcus	...	...	1 „ 1 „
Diphtheria and streptococcus	...	...	5 „ 2 „

The thirty-one cases of diphtheritic, pure or associated, laryngitis (croup) gives thirteen deaths : mortality, thirty-four per cent. instead of eighty-nine per cent. the three preceding years. The authors have observed the habitual effects of the injections of serum, rubeolic or urticarial rash, rheumatoid pains ; they mention an action on the menstrual function, which is advanced and sometimes more profuse.

A. Cartaz.

MOUTH, PHARYNX, &C.

Sendziak (Warsaw). — *Contribution to the Etiology of Black Tongue*. "Monatssch. für Ohrenheilk.," 1894, No. 4.

In a case of black tongue the author removed by the sharp spoon a portion of the surface of the tongue and found a micro-organism, which he has carefully examined and called a mucor niger.

Michael.

Jaruntowsky (Posen). — *Etiology of Tuberculous Affections of the Mouth*. "Münchener Med. Woch.," 1895, No. 18.

A PHTHISICAL patient, forty years old, complained for some days of pains in swallowing. In the region of the left molar tooth there was an ulcer covered with a necrotic slough. In the circumference there was inflammation and miliary tubercles in the tissue. The gum also was ulcerated. Extraction of the carious lower molar tooth was effected. The examination of the contents of the carious cavity showed conglomerations of tubercle bacilli. Some weeks later, death.

Michael.

Nissins, J.—*Disorders of Speech in Neuroses (Hysteria, Chorea, Paralysis Agitans)*. "Gaz. de Hôp.," Apr. 13, 1895.

CRITICAL review, with a study of hysterical mutism and [stammering. Nothing new.

A. Cartaz.

Fullerton, R.—*Abnormality of Fauces.* “Glasg. Med. Journ.,” April, 1895.

REPORT of a case. The patient was a woman of twenty-nine. The external portion of each anterior pillar was occupied by an elongated oval opening, extending from the level of the base of uvula down almost to the lingual attachment. The right posterior pillar was represented by a detached band of mucous membrane, in the position of the free edge of the normal pillar. The left posterior pillar and both tonsils were absent. Over the greater part of the pharynx the mucous membrane had been destroyed, leaving the submucous fibrous layer exposed without true cicatricial formation. There was no history of syphilis, nor of any acute affection of the throat.

Beausoleil.—*Tonsillar Calculus.* “Mercredi Méd.,” Apr. 24, 1895.

NOTHING particular. The calculus was of a whitish-grey colour, dense in consistency, and of considerable size (one centimètre and a half in diameter).

A. Cartaz.

Dieulafoy.—*Latent Tuberculosis of the Three Tonsils.* “Bull. Acad. de Méd.,” April 30 and May 7, 1895.

THE author considers as frequent that form of latent tuberculosis characterized by hypertrophy of lymphoid tissue in the pharynx and throat, and subsequently by the hypertrophy of lymphatic cervical and submaxillary glands. As proof of that frequency he has inoculated guinea pigs with portions of hypertrophied tonsils and adenoid vegetations. Sixty-one animals were inoculated (under the skin in subcutaneous connective tissue) with pieces of palatine tonsils; there resulted tuberculous manifestations, tuberculous ulcer in the site of inoculation, mesenteric tuberculosis, etc., in eight cases (12 per cent.). Thirty-five times the inoculation was practised with adenoid vegetations, and seven times the tuberculosis appeared (20 per cent.).

That variety of tuberculous tonsillitis is probably the result of cohabitation with a tuberculous person, or of consuming impure aliments. *Lymphatic, strumous* subjects are more disposed to contract the contagion, and the bacillus can provoke changes, and hypertrophy of lymphoid tissue. The first stage is that of hypertrophy; the second, hypertrophy of lymphatic glands; the third, propagation to the lung (pulmonary tuberculosis).

He insists on prophylactic measures, pure food, perfect state of rooms for the children, good hygienic prescriptions, salt baths, sea baths, cod liver oil, etc.

A. Cartaz.

Trifiletti.—*Amygdales.* “Encyclopédie de Médecine Italienne.” F. Vallardi. Milan, 1894.

IN this work the author discusses all relating to the palatine tonsils, the anatomy, physiology, pathology and treatment of these organs. In speaking of tonsillar hypertrophy, Trifiletti remarks that physicians and others in general have no strict ideas of the indications which ought to be taken into consideration when it is necessary to intervene actively in this morbid condition. To assist in the diffusion of knowledge upon this chapter of tonsillar pathology, the author thus reviews the indications for surgical intervention in cases of hypertrophy of the tonsils:—

1. If the volume of the tonsils has arrived at such a degree as to render respiration difficult, especially in bed, in these cases the hypertrophy is hurtful to the development of the chest and the whole organism.

2. If the tonsils only slightly hypertrophied are frequently attacked with inflammations.

3. If the tonsillar hypertrophy affects in any degree the hearing. In these

cases, before commencing any treatment of the ears, it is necessary to reduce the tonsils to a small size.

4. If the breath becomes offensive from the enclosure of particles of food in the tonsillar lacunæ.

Grazzi.

Teissier (Paris).—*Pseudo-membranous Angina in a Syphilitic Patient with the Parasite of Thrush.* "Arch. de Méd. Experiment.," vii., Feb., 1895.

TEISSIER relates the curious case of a syphilitic woman who, in the sixth month of pregnancy, was admitted into the hospital for a pseudo-membranous angina. On the pillars of the fauces were two white patches, pseudo-membranous and similar to diphtheritic sore throat. The bacteriological examination and cultures showed the pure mould of thrush between epithelial cells, without any other microbe. The mucous membrane of the mouth was not red, the woman was not cachectic, conditions generally favourable to the development of thrush.

A. Cartaz.

Monro, T. K.—*Case of Simultaneous Ulceration of the Lymphatic Tissues of the Throat and Intestines, with Suppuration of the Corresponding Glands in the Neck and Mesentery.* "Glasg. Med. Journ.," May and June, 1895.

THIS occurred in a sewer labourer, who complained of a swelling about the size of a hen's egg behind the right sterno-mastoid, and ulceration of the pharynx. This swelling was incised, a large quantity of pus being evacuated. After the operation the temperature rose, and remained high, delirium set in, and for ten days before death there was diarrhœa.

After a detailed description of the conditions found *post-mortem*, and summarized in the title, the author discusses the mode of invasion. (1) The virus may have settled in the tonsils and neighbouring lymphatic tissues, some of the organisms were then swallowed, and affected similar tissues in the intestine; (2) the virus may have settled primarily in the follicles of the intestine, the tonsils being infected later; (3) the invasion may have taken place independently and nearly simultaneously in the throat or bowel.

Herzfeld (Berlin). — *Treatment of Pharyngitis Granulosa and Lateralis.* "Monatssch. für Ohrenheilk.," 1894, No. 5.

THE author recommends the radical removal of the granulations and lateral bands.

Michael.

Stein (Moscow).—*Case of Gangrena Faucium Primaria.* "Monatssch. für Ohrenheilk.," 1894, No. 5.

A PATIENT, twelve years old, had for six months dyspnœa and fever. Auscultation and percussion showed disease of the heart. Speech had a nasal *timbre*. Negative result of examination of nose and throat. The temperature and pulse proved the presence of fever during the following weeks. Fourteen days later there was difficulty in swallowing, swelling of the glands of the neck, swelling of the left tonsil and *fœtor ex ore*. This process extended for fourteen days till the left tonsil, the palate and uvula were changed into a blackish ichorous ulcer with powerful fœtor. In spite of all treatment the propagation of the gangrene was not interrupted, and three weeks later the child died. The *post-mortem* examination showed hydrops pericardii without true morbus cordis, pneumonia and total gangrenous destruction of the pharynx and naso-pharynx.

Michael.

Felix (Vienna).—*Two Sarcomata of the Posterior Pharyngeal Wall.* "Monats. für Ohrenheilk.," 1894, No. 8.

(1) A PATIENT, fifty-nine years old, complained of difficulty in swallowing for some weeks. No abnormal laryngeal symptoms. The laryngoscope showed a

tumour the size of the little finger, situated on the posterior surface of the posterior wall of the larynx. The tumour, as examination with the probe showed, was fixed on the posterior wall of the pharynx. Extirpation with the galvanocaustic wire. Microscopical diagnosis, spindle-celled sarcoma. Cure. No recurrence. (2) A patient, aged seventy-three, had stenotic noise in respiration, without subjective symptoms. The laryngoscope showed a large tumour filling the whole space between epiglottis and pharynx, and covering the whole larynx. The tumour was of a greyish-red colour, and the size of a walnut, was mobile, and situated on the posterior pharyngeal wall. Extirpation. Cure. The microscope showed spindle-celled sarcoma.

Michael.

Fasano.—*Un cas de pemphigus de la muqueuse pharyngienne et trachéale.* "Archives Internationales." Fas. 10. Naples, 1894.

THE author reports a very rare case of pemphigus which developed only upon the pharyngeal and tracheal mucous membranes. Diagnosis is very difficult when this disease is not manifested on the skin. In this paper the author enters into the differential diagnosis between the ulcerations of pemphigus, syphilis, tuberculosis, etc.

Grazzi.

Lieven (Aachen).—*Contribution to the Treatment of Syphilitic Adhesions of the Soft Palate and the Posterior Pharyngeal Wall.* "Münchener Med. Woch.," 1895, No. 21.

THE author operates during narcosis with scissors. The after-treatment consists in the application of an air-filled soft rubber balloon, to prevent adhesion and the contraction of the cicatrices. In one case operated on with good result, the patient had afterwards "rhinolalia aperta," and difficulties in swallowing. The author says that not all cases should be operated on, because sometimes the condition of the patient is worse than before operation.

Michael.

Stein, Von (Moscow).—*First Published Case of Pharyngitis Phlegmonosa Acuta, complicated with Meningitis Purulenta.* "Monats. für Ohrenheilk.," 1894, No. 10.

A PATIENT, thirty-two years old, came to the hospital complaining of fever and difficulty of swallowing. The right tonsil was red and swollen. On incision there was a discharge of pus. The tonsil was better a few days, but there arose a swelling of the parotid, and œdema of the right eye. During the next few days the temperature rose to 40°; deafness; delirium; death. The *post-mortem* examination showed purulent infiltration of all soft parts of the fossa sphenopalatina. The pus found its way by both fissuræ orbitales inferiores to the basis cranii, and produced meningitis and obstruction of the lobus parietalis. In the masseter muscle an abscess was found.

Michael.

Corradi.—*De la fréquence des végétations adénoïdes dans l'espace nez-pharyngien en Italie.* "Bull. des Mal. de l'Oreille, etc.," Dec., 1894.

THE author declares the belief to be unfounded that in Italy, especially in certain regions (he practises in Verona), adenoid vegetations are rare. Corradi, on the contrary, believes that in diseases of the ears, especially in the cases of children attacked with catarrhal and suppurative otitis, adenoid vegetations often exist in considerable quantity. They ought to arrest the attention of the otologist more than of the rhinologist or laryngologist, and those who are occupied with these latter specialties in Italy imagine erroneously that adenoid vegetations are rare. Corradi describes in this work the operative method which he prefers, which does

not differ from that usually practised, except in the use of a curette of his own invention. *Grazzi.*

D'Aguanno.—*Sur le phase de regression ou de guérison des tumeurs du pharynx et du naso-pharynx.* “Boll. delle Mal. dell'Orecchio, etc.,” Oct., 1894.

AMONG the different retrogressive metamorphoses which tumours may undergo, there are some, although rare, which sometimes lead to the partial or total destruction of the neoplasm, and then to its diminution or complete disappearance. This process, which may occur to all tumours, not excepting malignant growths, has been noted especially in naso-pharyngeal tumours. This retrogression is produced, according to D'Aguanno, by alterations in the structure in the walls of the blood-vessels of the tumour and their contents. *Grazzi.*

Leech and Grosvenor (Manchester).—*Epithelioma of Œsophagus opening into Trachea.* Pathological Society of Manchester. “Lancet,” Mar. 30, 1895.

THE epithelioma was situated in the middle of the œsophagus, encircling the tube, and opening by a large perforation into the trachea.

N O S E, & C.

Tesier.—*New Method for the Administration of Ethylbromide in Rhino-Otology.* Thèse de Paris, 1895.

TESIER advocates the method as safe and sufficient for most rhino-otologic operations, adenoid vegetations, hypertrophied tonsils, aural polypus, paracentesis of tympanum, etc. He uses a dose of three to five grammes for children from three to eight years; five to ten grammes for children from eight to fifteen years. That dose is sufficient to put an end to cerebral inhibition, for the abolition of perception of pain, *apsychie*, as he terms that inebriate period of anæsthesia. Excellent review of the history of that anæsthetic, with experimental and physiological researches. *A. Cartaz.*

Lens (Kiew).—*A New Nasal Dilator.* “Wiener Med. Woch.,” 1895, No. 18.

A SELF-RETAINING nasal speculum.

Michael.

Gerber (Königsberg).—*Rhinoliths, a Product of Bacteria.* “Monats. für Ohrenheilk.,” 1894, No. 10.

POLEMICAL article.

Michael.

Ficano.—*Sur le rapport qui existe entre les organes genitaux et le nez.* “Bull. des Mal. de l'Oreille, etc.” Florence, Nov., 1894.

THE author reports the opinions of several authors on this subject.

Grazzi.

Clément, G.—*Relations of Nasal Diseases with the Respiratory Organs.* Thèse de Paris, 1895.

CLÉMENT relates some cases in demonstration of the injurious influence of nasal diseases (obstruction by deviations of septum, polypus or infectious rhinitis, etc.) upon the etiology and course of some laryngo-tracheal or bronchitic inflammations. Nothing new. *A. Cartaz.*

Mendel.—*Ozena.* "Méd. Mod.," Apr. 27, 1895.

CLINICAL lecture. Nothing new.

A. Cartaz.

Gomperz (Vienna).—*Lipomata in the Nasal Mucous Membrane.* "Monats. für Ohrenheilk.," 1894, No. 9.

A PATIENT, sixty years old, had a tumour the size of a cherry situated on the left side of the septum. Extirpation by the galvano-caustic wire and sharp spoon. The microscopic examination showed that it was a lipoma. A year later no recurrence.

Michael.

Cozzolino.—*Contre les epistaxes du sept et des cavités auriculaires, etc.* "Rev. de Clinique et Therapie." Année 15. No. 10, 1894.

FROM the author's experiments it appears that a dilute solution of trichloroacetic acid succeeds better in epistaxis than perchloride of iron. He advises the use of this in one per cent. solution combined with a small quantity of cocaine. Hæmostasis is produced without any inflammatory action.

Grazzi.

Arslan.—*Siphylome initial de la fosse nasale droite.* "Archives Italiens de Laryngologie." Année 14. Fasc. III., 1894.

THE author publishes this case in view of the comparative rarity of cases of primary syphiloma of the nose. The patient was a woman, thirty years of age, from the province of Padua, whose right nasal fossa was occupied by a white and yellow mass situated upon the superior half of the quadrangular cartilage. After exposing the affected part there was seen to be a yellow ulceration of hard consistence. The patient was cured by specific treatment.

Grazzi.

Kayser (Breslau).—*Report on the Cases of Diseases of the Nose, Throat and Ear in Prof. Gottstein's Private Clinic in the Years 1891 and 1892.* "Monatssch. für Ohrenheilk.," 1894, Nos. 2 and 3.

STATISTICAL review.

Michael.

Winkler (Bremen).—*Is it allowable to apply those therapeutic manipulations which are applied lege artes in suppurations of the Highmorian Antrum, and also in those of the Frontal Sinus?* "Monats. für Ohrenheilk.," 1894, Nos. 2 and 3.

EXAMINATION with a probe only in such cases should be applied if it is easy to enter by the natural way; but if this way is occluded by bone it is not possible to know how thick this bone is, and it would be dangerous to perforate it by force.

Michael.

Winkler (Bremen).—*On a Misunderstanding produced by my Paper on Treatment of the Frontal Sinuses.* "Monats. für Ohrenheilk.," 1894, No. 5.

POLEMICAL article.

Michael.

LARYNX.

Schmidt (Laurahutte).—*Clinical History of Pachydermia of the Larynx.* Inaugural Dissertation. Berlin. 1894.

GOOD review.

Michael.

Stepanow (Moscow). — *Pathologic Anatomy and Histology of Scleroma.*
 "Monats. für Ohrenheilk.," 1894, Nos. 7 and 8.

MORE of pathologico-anatomical interest.

Michael.

Permewan (Liverpool). — *Cases of Laryngeal Paralysis.* Liverpool Medical
 Institution. "Lancet," Mar. 23, 1895.

TWO cases of bilateral laryngeal paralysis. In the first case there was a history of dysphagia and spasmodic dyspnoea; no œsophageal stricture could be detected, but there was complete bilateral abductor paralysis. The patient died from starvation. The *post-mortem* examination revealed cancerous growth, involving both recurrent laryngeal nerves. The second case was one of bulbar paralysis starting with the abductors, the adductors being affected some months after.

Treitel (Berlin). — *Two Cases of Recurrent Paralysis.* "Deutsche Med. Woch.," 1895, No. 20.

(1) A PATIENT, aged thirty years, affected with rheumatism of the joints and hoarseness. The laryngoscope showed paralysis of the left recurrent nerve. Examination of the thorax showed a dull sound over the manubrium sterni. Cure by internal use of Fowler's solution and the faradic current. The author believes that the dulness was caused by a swollen rheumatic lymphoid gland, and that this caused by pressure on the nerve the recurrent paralysis.

(2) A patient, aged fifty-nine years, complained of hoarseness. The laryngoscope showed paralysis of the right vocal cord. The whole larynx was inclined to the left side. On the right side of the neck was a tumour the size of an apple, of bony hardness in consistence. The tumour was believed to be a malignant goitre, and it was thought that it caused the recurrent paralysis. The tumour was extirpated, and turned out to be a benign cystic goitre. The recurrent nerve was not pressed on by the tumour. By pressure on any part of the neck the voice could be restored for some time. Four years later, no return of the tumour, but no improvement of the voice.

Michael.

Neumayer (Munich). — *On a Musculus Thyroideus Transversus.* "Monats. für Ohrenheilk.," 1894, No. 10.

NEW observation of this rather rare abnormality.

Michael.

Audubert. — *Tertiary Laryngitis and its Treatment by Sulphuretted Luchon Mineral Waters.* "Journ. de Méd., Bordeaux," Apr. 14, 1895.

AUDUBERT relates the good effects of these mineral waters in tertiary syphilitic manifestations in the larynx, after or simultaneously with the specific medication. He prescribes the various springs of that mineral station according to the intensity of the lesions. Inhalation or "humage" is specially advantageous. *A. Cartaz.*

Claude, H. — *Sub-Glottic Laryngeal Tuberculosis, Stenosis, Intubation.* "Bull. Soc. Anat., Paris," Mar. 15, 1895.

A GIRL of fourteen years, admitted into the Children's Hospital for laryngeal stenosis, secondary to pressure on the recurrent nerves produced by tracheo-bronchial adenopathy. Intubation during five days. Respiration easier, but general state badly affected. Fever, emaciation, death by sudden suffocation, tracheotomy not restoring the breathing.

At the necropsy extensive ulcerations and polypoid vegetations, of tuberculous nature, in the inferior part of glottis and superior part of trachea. Considerable development of bronchial adenitis involving the recurrent nerves. *A. Cartaz.*

Tsakiris.—*New Method of Intubation of Larynx.* "Gaz. des Hôp.," May 14, 1895.

MODIFICATION of O'Dwyer's instruments. The tube is made of aluminium.

A. Cartaz.

Henry.—*Three Cases of Intubation in Croup.* "Bull. Méd. du Nord," Apr. 26, 1893.

NOTHING new.

A. Cartaz.

Bonain.—*Treatment of Laryngeal Stenosis in Croup, and specially by Intubation.* "Bull. Méd.," Apr. 17, 1895.

BONAIN advocates intubation in preference to tracheotomy in diphtheritic laryngitis. According to the numerous statistics, before and since the introduction of antitoxin, the death-rate is always and in various countries less than with tracheotomy. He uses, together with sero-therapy, calomel fumigations (one gramme every two hours) as has been indicated by Dillon Brown ("Med. News," May, 1894). When the stenosis is pronounced, he practises intubation, not leaving the thread. During the continuance of intubation he orders steam inhalation. The tube is withdrawn on the fourth day, in general.

Bonain insists on the facilities and safety of that method and believes it must, in the majority of cases, be substituted for cutting operations. *A. Cartaz.*

Castelain.—*Statistical Study of a Hundred Cases of Tracheotomy for Diphtheritic Laryngitis.* "Bull. Méd. du Nord," Apr. 12, 1895.

CASTELAIN relates in detail a hundred tracheotomies for diphtheria. He has had thirty-nine cures. He gives an interesting relation of other—French or foreign—statistics, before the introduction of sero-therapeutics. *A. Cartaz.*

Remebboth (Halle).—*Death of a Tracheotomized Patient by Hanging.* "Vierteljahrsschriften Gesichts. Med.," 1895, Heft 2.

THE patient came in the hospital on account of tumours of the neck compressing the trachea and œsophagus. The epiglottis was changed into a large œdematous tumour. The patient could not swallow at all, and it was impossible to introduce a probe, because when it was tried the patient became asphyctic. Tracheotomy was performed, and the patient was fed with an œsophageal tube for six weeks. Then the introduction of the tube became more and more difficult, and of late it has become impossible. The patient became feverish, and coughed out gangrenous pieces of the lung, so that it was certain that there was a perforation of the œsophagus into a lung. The patient's strength was relatively good. Six weeks after his entering the hospital the patient was found hanged by a blind cord. The cord was situated over the canula, and the opening of the canula was free. The *post-mortem* examination showed the arteries of the base of the brain strongly filled; medulla oblongata not changed. On the neck a number of enlarged hard tumours. The strangulation mark began on the mandibular angle, and continued over the anterior part of the neck. The muscles of the neck were intact. Both external carotids showed a rupture of the intima. The vertebral column was intact. The muscle of the heart slightly brown, but well contracted. How long the hanging had lasted when the exitus occurred cannot be said. The pathological state of the organs was the same as is found in other cases without canula. The author has found three similar cases in literature. Experiments made by the author in rabbits, which were hanged without tracheotomy or after it, gave the following results: Death arose, when the trachea was not opened, in one to three minutes;

when it was opened, in ten to twenty minutes. In both cases the pulsation of the heart lasted a minute and a half longer than the respiration. Convulsions were observed without or with tracheotomy. Consciousness seemed to persist longer in tracheotomized cases. In non-tracheotomized cases the temperature arose in a short time to 40°; in tracheotomized, only some tenths of a degree. The *post-mortem* examination gave in both cases the same results. *Michael.*

Kobler (Sarajeur).—*Foreign Bodies in the Bronchi and their Consequences.* "Wiener Klin. Rund.," Nos. 12, 13, 14, 15, 16, 17, and 18.

EXTENSIVE treatise on this subject. A great number of cases carefully collected from literature. Only those cases can here be reported which were observed by the author himself. (1) A patient, twenty-three years old, was affected for a year. He had severe cough, bloody expectoration, and slight fever. The phalanges showed the Hippocratic degeneration. The right half of the thorax was better expanded than the left. Slight dulness in the upper parts of both sides. The heart was displaced, its apex-beat being found in the fourth right intercostal space. In the right lower parts dulness, in the posterior upper parts tympanic percussion sound, metallic rhonchi and bronchial amphoric breathing. There was a great deal of purulent secretion, without tubercle bacilli. The presence of a large cavity made it probable that there was a foreign body in the right bronchus. The *post-mortem* examination showed a large number of cavities in the right lung, and also that they were caused by a foreign body, although a foreign body was not found. (2) A patient, aged forty-five, had for some months a severe cough, since she had inspired a plum-stone, as she said herself. Over the whole right side there was dulness, and the respiration sounds and fremitus were diminished. Some months later, during a severe attack of coughing the foreign body was expectorated, and the patient cured in a short time. The author concludes that in the absence of pathological symptoms experimental attempts at extraction are not indicated, but the patient must remain under medical observation. If pathological symptoms and consecutive disturbances arise, and the foreign body is not expectorated, or if it is mobile, so that it might occlude the glottis, tracheotomy, with subsequent emetics, or attempts at extraction, should be performed. *Michael.*

THYROID, &c.

Schein, Moritz (Vienna).—*The Secretion of the Thyroid Gland in Milk.* "Wiener Med. Woch.," 1895, Nos. 12, 13, 14, 15.

IN congenital absence of the thyroid gland the consequences do not arise till the feeding is no longer exclusively milk. Sometimes tetanus arises during lactation in women. The author reports three cases from literature in which the first symptoms of myxœdema arose as the exclusive feeding with milk ceased. This fact shows that it will be useful to feed strumous, tetanic, cretinic, and myxœdematous patients with milk. To prevent tetanus during lactation it will be advantageous to feed the mother also chiefly with milk. The author also relates a case in which myxœdema followed lactation. *Michael.*

Lanz (Bern).—*Feeding with Thyroid Gland. Can the Thyroid Gland of Swine be successfully employed?* "Correspbl. für Schweizer Aerzte," 1895, No. 10.

EXPERIMENTS on animals prove that the thyroid gland of swine is as efficacious as that of calves and sheep. *Michael.*

Dennig (Tubingen).—*Further Contribution on the Influence of Thyroid Feeding on Tissue Change.* "Münchener Med. Woch.," 1895, No. 20.

EXACT physiological researches on a case proving that the influence of this feeding varies in different cases. Sometimes the influence is very great, in others it does not exist at all. *Michael.*

Fürst (Berlin).—*Remarks on Basedow's Disease.* "Deutsche Med. Woch.," 1895, No. 21.

POLEMICAL article concerning Lemke's paper in Nos. 41 and 52 of the "Deutsche Med. Woch.," 1894. *Michael.*

Buschan (Stettin).—*Diagnosis and Therapeutics of Basedow's Disease.* "Deutsche Med. Woch.," 1895, No. 21.

ANSWER to Lemke's paper in Nos. 41 and 52 of the "Deutsche Med. Woch.," 1894. Polemical article. *Michael.*

Hitzig (Burgdorf).—*Contribution to the Histology and Histogenesis of Bronchocele.* Inaugural Dissertation. Zürich. 1894.

GOITRE begins with proliferation of the normal epithelium of the glands. The proliferated parts form little tumours, "nodulous" bronchocele, or are equally distributed in all parts—"diffuse" bronchocele. *Michael.*

Hawthorne, C. O.—*Graves' Disease in a Patient, the subject of Articular Rheumatism and Mitral Stenosis.* "Glasg. Med. Journ.," June, 1895.

HISTORY of this case shows two attacks of acute or subacute rheumatism with lesion of heart resulting. Present examination shows mitral stenosis, and also the symptoms of Graves' disease, except muscular tremor and appreciable enlargement of the thyroid gland. The interest of the case arises from the rarity of the combination.

Hughes, E. Prest (Sheffield).—*An Extreme Case of Angina Ludovici arising from an Inflamed Carious Tooth.* "Lancet," Mar. 23, 1895.

THE patient, a man, aged thirty-one, had suffered for ten days from toothache. On admission the front of the neck was swollen, hard, and brawny, not pitting on pressure; voice a whisper; unable to swallow. The swelling extended from the angle of the jaw downwards and forwards to third costal cartilage; the jaw was fixed, and the tongue forced into the roof of the mouth. An incision was made in the median line, from symphysis to lower border of larynx; the parts were pale and hard to the touch; there was no sign of pus. During the operation the respiration became embarrassed and the pulse failed, and notwithstanding tracheotomy and artificial respiration, etc., it was found impossible to resuscitate him.

EARS.

Mackenzie, Hector (London).—*Hysterical Deafness*. "Lancet," Mar. 16, 1895.

A PAPER read before the Medical Society of London on March 11th. The author read the notes of a case of bilateral deafness in a girl aged sixteen, lasting two years notwithstanding various treatment, yielding readily in two weeks to the treatment proposed by Dr. Gilles in the "Marseille Médical," namely, the re-education of the sense of hearing.

Connal, J. Galbraith.—*Discharge of Tympanic Ossicles after Scarlet Fever*. "Glasg. Med. Journ.," June, 1895.

REPORT of a case. The points of interest were (1) that the lesion was symmetrical, the malleus and incus from both ears coming away; (2) the rapidity of the process; (3) that the ossicles themselves seemed quite unaffected by the inflammatory action; (4) that the suppuration ceased very rapidly after discharge of the ossicles; (5) that the patient was left completely deaf.

Ferreri.—*Manuel pratique pour le diagnostic et le traitement des maladies de l'oreille, particulièrement dans l'enfance*. Editeur Dr. F. Vallardi. Milan, 1894.

DR. FERRERI'S book, from the richness of the scientific details which it comprises, and from the results of his extensive practice acquired from many years' work as assistant at the otological clinic of Prof. de Rossi at Rome, deserves to be studied by all. Grazzi.

Pes and Gradenigo. — *Contribution à l'étude des otites moyennes aiguës par bacillus pyocyaneus*. "Bull. des Mal. de l'Oreilles," Nov., 1894.

THE authors, after stating that true median otitis caused by the bacillus pyocyaneus are rare, and a few cases are found reported, relate two examples in which they got pure cultivations of a micro-organism which they identified as the bacillus pyocyaneus from the pus. From the study of these cases under their observation the authors have arrived at the following conclusions:—

1. The bacillus pyocyaneus must be considered to be capable of producing general infection of the organism, and among local infections one must record acute median otitis.

2. That the bacillus pyocyaneus can produce solely morbid local phenomena. Grazzi.

Tweedy, H. C. (Ireland).—*Symmetrical Gangrene of the Ears*. Pathological Section, Royal Academy of Medicine, Ireland. "Lancet," Mar. 23, 1895.

THE patient, a man, aged thirty-five, suffered from symmetrical gangrene of the ears. The autopsy showed mitral stenosis, dilation of right ventricle, and advanced atheroma of aorta and bicuspid valve.

REVIEWS.

Thomson.—*Dr. Onodi's Atlas of the Nasal Cavity and Sinuses.* By ST. CLAIR THOMSON. H. K. Lewis, Publisher.

Dr. THOMSON has rendered English-speaking rhinologists a great service in putting Dr. Onodi's atlas before them in their own language. The atlas, of whose value it is difficult to speak too highly, is most admirably brought out, the plates, of course, being the same as in the original; they are most beautifully executed, and cannot fail to be of the greatest value to students and practitioners of nasal surgery. The explanation of the plates and the introduction, somewhat elaborated from the original, are clear and concise.

On page 12, the presence of deviation of the septum in infants is alluded to; an important point in the etiology of deflections of the septum and cysts of the middle turbinated are also rendered capable of a rational explanation, as in the succeeding page the following expression occurs: "The middle turbinated . . . and sometimes contains a hollow cyst-like cavity in its anterior extremity."

Scheff (Vienna).—*The Direction of the Air Current through the Nose founded on Anatomical and Experimental Researches.* With five woodcuts. "Klinische Zeit. und Streitfragen," Band 9, Heft 2. Vienna: Alfred Holder. Pp. 27.

THE author reports upon the literature, describes his experiments, and concludes:—The only direct and unimpeded way for the air current is the middle nasal meatus. The aditus to the inferior meatus, which is much narrower than the middle, is obstructed by the anterior end of the inferior turbinal. In the upper part of the nasal cavity the external and internal walls are very near to one another, and both superior turbinated bodies also are impediments to the passage of the air stream. *Michael.*

PROCEEDINGS OF THE LARYNGOLOGICAL SOCIETY OF LONDON.

Ordinary Meeting, April 10th, 1895.

Papilloma of the Nose. Mr. CRESSWELL BABER showed this case.

A clergyman, aged thirty-six, first noticed a growth in his left nostril two years ago. In August, 1894, it was removed by another surgeon, and pronounced after microscopic examination to be a papilloma. It

grew from the floor of the nose, and was entirely removed, the left ala being slit up for the purpose. Two months after the operation it appeared again as a small papilla on the floor of the nose. Condition when seen on March 7th, 1895, was as follows :—In the left nasal cavity there is a firm mammillated growth, like a small mulberry, projecting into the vestibule, and extending backwards about three-quarters of an inch. It is attached by a broad base to the floor of the nasal cavity and to the septum. Just behind the tumour is a deflection of the septum, through which there is a clear-cut perforation about one-eighth of an inch in diameter. Right nasal cavity normal except that it shows the concavity of the deflection and the perforation. By posterior rhinoscopy (with palate hook) the parts are found normal excepting a slight swelling on the left side of the septum, probably unconnected with the growth. There are no enlarged glands. There is no history of syphilis. A small piece from the upper part of the growth was removed for microscopical examination with the cold snare, but it proved so firm that the screw of the snare had to be brought into requisition. The microscopic examination showed only hyperplasia of structure, and no malignant elements. The patient has a flat wart on his head, which he is in the habit of picking, and it has been suggested that the nasal cavity may have been directly inoculated by means of the finger.

Mr. BABER wished to have the opinion of the members with regard to the nature of a further operation.

Mr. BUTLIN advised the free excision of the growth, and the destruction of the remains with the galvano-cautery. He considered the growth extremely active for an innocent one.

Case of Lupus of the Throat and Nose. This case was shown by Dr. J. B. BALL.

Emma K., aged fourteen, was admitted to the West London Hospital on March 5th, 1895, suffering from hoarseness and laryngeal dyspnœa. She first complained of her throat about eighteen months previously, and had attended at a London hospital for some months, when she was told that she was suffering from lupus of the palate. Has had no treatment during the last nine months. Has suffered from obstruction and crusting in the nose for some months. Two months previous to admission had a sore patch on the left side of the neck. The hoarseness commenced about the end of December, 1894, and for two or three weeks previous to admission the breathing had been noisy, especially at night.

Patient was a fairly healthy-looking girl, though rather thin. No history of phthisis. The voice was husky, and there was well-marked laryngeal stridor and slight cough; no pain or dysphagia. There was some enlargement of the glands under the angles of the jaw, especially on the right side. On the left side of the neck, a little below the ear, was a patch of lupoid ulceration about the size of a florin, covered with crust. The gums were normal. The whole of the anterior aspect of the soft palate presented a coarsely granular surface, with here and there some fine cicatricial striæ. The granular appearance extended forward on to the hard palate for a little distance. The pillars of the fauces, especially

the right, were thickened, and studded with fine granules. Epiglottis appeared to be partially eaten away; it was thickened, and its free edge presented some large pale nodules. The ary-epiglottic folds and arytenoids were swollen and pale. The ventricular bands thickened slightly nodular, especially the left, and the edges of the cords, which were just visible, seemed uneven. On deep respiration the cords were not freely abducted. Both nostrils were blocked with crusts. On removal of these an ulcerated surface was exposed, occupying both sides of the septum nasi, extending from a little above the columna for about three-quarters of an inch, and involving the floor of the nose and the fore-part of the inferior turbinated body on each side. About half an inch above the columna there was a small perforation through the septum. Chest normal. Patient has been in the hospital since March 5th, and has taken cod-liver oil and arsenic. The ulcerated patch on the neck has been scraped, and has cicatrized. The nose has also been scraped, and is much improved. The laryngeal dyspnoea has quite disappeared, apparently owing to a diminution of the nodular thickening of the ventricular bands, and there is a freer mobility of the vocal cords. The general condition of the throat is improved.

In view of the apparent improvement, and of good results obtained in a similar case recently exhibited by the President, under the administration of cod-liver oil and arsenic, it is intended for the present not to apply any active local treatment to the throat.

Mr. C. SYMONDS inquired if thyroid extract had been given, as he had seen cases in which remarkable results had followed its administration.

In reply, Dr. BALL stated that he had not yet used the extract, as the case was doing so well without it.

A Case of Nasal Deformity of Traumatic Origin. Shown by Dr. J. B. BALL.

May M., aged fifteen, a healthy-looking girl, came to the West London Hospital with a view to having an operation done to improve the appearance of her nose. When four and a half years old she had received a violent blow on the nose with the fist. The nose bled very much, the under part was severed from the face, and it was a long time before the parts were healed. At present the nose is broad and flattened, the nasal bones being depressed and spread out. There is a transverse groove across the nose at the line of junction of the nasal bones and lateral cartilages. The plane of the anterior nares is directed somewhat forwards. The anterior part of the septal cartilage is destroyed, as well as a portion of the columna, only a stump of the latter remaining in front and behind. There is a communication running from the anterior part of the floor of the nose into the mouth, between the upper lip and the alveolar process.

The general appearance of the parts rather suggests some destructive disease, such as syphilis, as the cause, but the history of a traumatic origin is very definite, and there is nothing in the family or personal history to indicate syphilis. My colleague, Mr. Keetley, proposes to

operate, and the case is shown partly on account of the peculiar deformity of traumatic origin, and partly with a view of eliciting suggestions as to the best means of remedying the deformity.

Mr. KNYVETT GORDON showed—

1. *A Section of a Middle Turbinate Body with Polypus Formation.*

Though there was no dead bone to be seen or felt in the nose, and no operation had been performed in that situation, yet there was microscopically well-marked caries of the bone, as shown by the destruction of tissue with well-marked small-celled infiltration and numerous osteoclasts.

Dr. HILL thought the specimen was exactly like that described by Woakes.

Mr. SYMONDS asked how the specimen differed from normal bone. He could see some change at the edge of the specimen, but none in the bone itself.

Dr. S. SPICER said that clinically this was a case of ordinary polypus; was he to infer that ordinary polypi lead to absorption of bone?

Mr. GORDON, in reply to Dr. William Hill, stated that he was inclined to regard cases such as this as an early stage of Dr. Woakes's "cleavage."

In reply to Mr. Charters Symonds, he said that the presence and position of the osteoclasts, with the small-celled infiltration, had led him to the diagnosis of caries.

2. *Sections of masses curetted from the Antrum Maxillare in cases of Empyema, by Dr. Scanes Spicer.*

These showed marked proliferation of the mucous glands in the lining membrane, the epithelium of which was in a state of active secretion. The proliferation was so great as almost to justify him in describing the growth as an adenoma.

Empyema of Antrum entirely Cured by Treatment by means of Krause's Trocar. Shown by Dr. DUNDAS GRANT.

Diagnosis was made by means of transillumination and Lichtwitz's exploratory irrigation in June, 1894, while under care of Dr. Wallis Ord for epileptic fits. The nasal discharge and obstruction had existed for some years.

A perforation was made through alveolus on July 9th, when fluid came through the nose, but pain and swelling occurred in the cheek. It was later determined to try intra-nasal treatment only.

Krause's trocar was used in September, and through it the antrum was washed out twice or thrice a week with Sanitas lotion. In a few weeks the discharge had completely stopped, and has not since returned. Since the improvement in the condition of his nose the epileptic fits have almost entirely disappeared, though of course he has not left off his regular bromide.

Empyema of the Antrum of Highmore, complicated with Suppuration of (probably) the Frontal Sinus. Shown by Dr. DUNDAS GRANT.

A young Scotchman, who for about two and a half years had a foetid

nasal discharge on the left side, and had suffered a good deal of treatment at various hands, came to me in October last.

Empyema of the antrum was diagnosed by means of transillumination and Lichtwitz's trocar. Krause's trocar treatment was instituted and some relief afforded, but still more when the alveolar perforation was made and daily irrigation practised. The discharge fluctuated in amount to an unusual degree, and it was observed that after washing out the antrum with apparent completeness a return of discharge occurred within a few minutes. On inspection this could be seen to spring from the upper part of the semilunar hiatus, and more could be washed out by means of Hartmann's frontal sinus tube. Puncture of the bulla ethmoidalis revealed no ethmoidal pus. I have recommended external opening of the left frontal sinus, but the patient is unwilling to submit to it.

Case of Empyema of the Antrum under treatment by means of Krause's Trocar. Shown by Dr. DUNDAS GRANT.

A young married woman, suffering from nasal suppuration of old standing. Her antrum was opened through the alveolus of an extracted tooth two years ago, and she practised irrigation with soda solution, followed by the injection of a little peroxide of hydrogen. Irrigation was to be practised twice or thrice a week, and in seven months she seemed well, the condition remaining apparently stationary till five months ago. She returned to me about two months ago.

Krause's trocar was introduced about five weeks ago; the antrum was freely washed out and inflated, so as to blow out the remaining moisture, and euophen was insufflated through the canula.

Great diminution in the amount of discharge has taken place, and she can get on comfortably with much less frequent irrigation, though at present she is unable to go for a week without it.

Case of Empyema of the Antrum greatly benefited by the Use of Krause's Trocar and Canula, and Closure of the Alveolar Perforation. Shown by Dr. DUNDAS GRANT.

A gentleman, aged fifty-five, who first suffered from nasal discharge about 1884. Numerous polypoid growths were removed from time to time down to 1894.

Antral empyema was diagnosed in February, 1894, and alveolar irrigation was carried on up till the last two months, when no further improvement seemed to accrue.

In October, 1894, Krause's trocar was used, and irrigation followed by drying and insufflation of antiseptic powders (of which euophen was found to be the best) was continued at gradually increasing intervals. Alveolar irrigation was gradually left off, and the discharge diminished. The alveolar opening was allowed to close in February of this year, and still greater improvement took place.

He left town five weeks ago, and omitted all treatment, the nasal condition causing hardly any inconvenience. He has just returned, but on irrigation foetid muco-pus could be evacuated.

Empyema of the Antrum secondary to Suppuration in the Frontal Sinus treated by means of Krause's Trocar with good result. Shown by Dr. DUNDAS GRANT.

Referred to him by Dr. Graham Grant in July, 1892, on account of pain in left front region and discharge of foetid pus from the left nostril. Antral disease was excluded by means of transillumination and Lichtwitz's puncture.

A small external opening was made in February, 1893, and pus revealed. Drainage and irrigation were practised with very slight improvement. The anterior part of middle turbinal was removed, but even then the discharge persisted in spite of apparent improvement of the condition of the frontal sinus.

The sinus was widely opened by means of gouge-forceps in June, 1894, and the granulating lining was thoroughly scraped. The nasal discharge continuing, the antrum was again examined, and proved to be the seat of an empyema. In a few weeks the suppuration entirely disappeared under treatment by means of Krause's trocar.

Mr. C. SYMONDS said that as it was presumed the good effect in these cases was due to drainage, he did not see that the meatal opening was superior to the alveolar.

Dr. BALL thought the advantages of Krause's trocar depended on whether it was better to use the dry treatment with powder once a week or fluid daily.

Dr. LAW asked if euophen was more efficacious than iodoform.

Dr. GRANT, in reply, said he had been led to try the meatal plan on a patient who had a beautiful set of teeth, and would not agree to the alveolar operation. Also many cases operated on by the alveolar method became stationary, and one case improved greatly when the alveolar opening closed. He also thought it was possible for infection to spread through the opening. He would suggest it, too, as an alternative method of treatment. He had not given iodoform such a trial as he had euophen, but it was much better than any of the substitutes for iodoform, and had not the distinctive odour.

A Case of Tubercular Laryngitis. Previously shown at an early meeting of the Society by Dr. DUNDAS GRANT.

The ulceration was on the former occasion almost entirely confined to the region of the right vocal process, and may be remembered as presenting, on a mass of pale granulations at that point, a white spot where the galvano-cautery had been applied. Since that time the patient has been residing in Jersey, his voice has got more hoarse again, and his cough more frequent. Tubercle bacilli have been detected (though formerly absent), but no pulmonary lesion can be demonstrated. The granulations in the region specified have become more exuberant, and there has developed a shallow longitudinal fissure just below the edge of the opposite (left) vocal cord.

The laryngeal symptoms are diminishing, and the local signs becoming less marked under almost daily application of pure lactic acid.

The PRESIDENT said he had been asked how long his cases treated

by the simple methods lasted. He would say, taking them in the broadest sense, an average of three or four months. He had a letter from Dr. Brady about one case which had gone to Australia, and which had lasted between one and two months.

Dr. HALL suggested that in this case the pure air of the sea voyage had operated beneficially.

A Case of Mycosis Fungoides. Shown by Dr. DE HAVILLAND HALL.

A man, aged fifty-two, suffering from mycosis fungoides. The disease had existed for about two years and a half. There are numerous tumours all over the body and limbs. In October, 1894, he complained of sore throat, and has had more or less pain in the throat since, but the speech has not been affected. On the posterior and lateral walls of the pharynx there are small oval tumours, and on the left arytenoid cartilage there is a tumour about the size of a hazel-nut; the surface is superficially ulcerated. This is thought to be the first case in which the larynx has been attacked by mycosis fungoides.

The PRESIDENT suggested, and it was agreed to by the Society, that as Dr. Hall's case was unique, a drawing of it should be made for insertion in the "Proceedings," and Dr. Waggett was asked to make it.

Disease of the Frontal, Ethmoidal, and Maxillary Sinuses in Association with Nasal Polypi. Dr. WILLIAM HILL showed a patient.

A. K., aged thirty-four, who recently sought his advice at St. Mary's Hospital for pain in the nose and chronic headache. Nasal polypi had been removed fifteen years before. She suffered from a profuse purulent discharge, and the left nostril was blocked with mucous polypi; these were removed, and pus was then seen issuing from under the anterior extremity of the left middle turbinated, which was enlarged and bulbous; this end of the turbinated was cut off, and an ounce and a half of pus immediately came away, giving the patient instant relief. Granulations could then be seen and diseased bone felt in the neighbourhood of the ethmoidal cells. The left frontal sinus was tender on percussion, and the skin over it was red, and at times puffy; the left maxillary sinus was dark when tested by transillumination.

Whilst the amount of discharge in the neighbourhood of the hiatus semilunaris was not now abundant, a profuse flow of matter was constantly to be seen coming down between the middle turbinal and septum from the superior meatus, presumably from the posterior ethmoidal cells. The middle turbinated was very enlarged, but not cystic, and Dr. Hill thought that nothing short of removal of this bone would relieve the ethmoidal disease which was the prominent factor in the case. He was also prepared to open the frontal sinus by a vertical incision, and the antrum through the canine fossa. He hoped to show the patient again later.

Epithelioma of the Pharynx. Dr. WILLIAM HILL also showed this patient.

A man, aged forty-four, consulted him at St. Mary's Hospital a week previously, complaining of pain in the throat, rendering swallowing

difficult, and a shooting pain in the ear. On laryngoscopic examination an ulcer was seen in the right glosso-epiglottic fossa, extending into the pyriform fossa; the right posterior pillar and the right side of the epiglottis were œdematous, the edges of the ulcer were hard, and prominent to the touch; there were some tender and slightly enlarged glands on the right side of the neck at the level of the hyoid bone. There was no history or identification of syphilis. The patient had the day before been digitally examined by students at the College examinations, and the pharynx was much swollen and œdematous in consequence, and less typical in appearance. It was proposed to perform pharyngotomy, and endeavour to remove the growth and the enlarged glands. Mr. Pepper has recommended and offered to carry out this treatment.

Microscopical Specimens illustrating Case of Multiple Papillomata of Larynx. Shown by Dr. HUNT.

C. W., aged twelve, was operated on by Mr. Paul at the Liverpool Royal Infirmary on September 28th, 1893, when a large growth, which had so completely obstructed the larynx as to demand tracheotomy two months previously, was removed by thyrotomy (*see* Liverpool "Med.-Chir. Journal," Jan., 1894). This growth was described by Mr. Paul as having "all the microscopic characters which point to the least malignant form of spindle-celled sarcoma, without allowing any question that it is a genuine sarcoma, and not a simple benign growth."

Six months afterwards I made a laryngoscopic examination of the patient, as his breathing was again becoming difficult, and recurrence was feared. I then found the cavity of the larynx filled by two pale warty-looking growths, springing from the left ventricular band, evidently pedunculated, and freely movable with the breath current. A third growth of a similar character was situated on the posterior surface of the left arytenoid. These growths were easily removed by means of Schroetter's forceps, and on microscopic examination were found to present the characters of simple papilloma.

During the past year I have on many occasions removed similar growths from this patient's larynx, originating from the vocal cords, the ventricular bands, and the ary-epiglottic folds, but so far there has been no recurrence of the original growth which sprung from the under surface of the left cord.

The PRESIDENT asked if anyone had seen a similar case in which the usual order of events had been transposed, and papillomata had followed sarcoma.

Mr. BUTLIN had never seen such a case.

Dr. HUNT, in reply, stated that there was no real recurrence, and that the papillomata were situated on a different site, though close to the former scar.

Laryngeal Stenosis; Polypoid Growth from Left Vocal Cord. Case shown at the January meeting, 1895, by Dr. PERCY KIDD.

After tracheotomy had been performed, the growth on the left side and portions of the fleshy swollen vocal cords were removed with

Mackenzie's cutting forceps. Much increase of the glottic space was obtained, the tracheotomy wound was allowed to close, and, for a time, the patient experienced considerable relief.

Microscopical examination of the tumour revealed a well-marked papillomatous structure, with slight, small-celled infiltration of the submucosa, but no appearances of tuberculosis.

Early in March the patient's general condition began to deteriorate, the chief symptoms being progressive weakness, loss of flesh, moderate remittent pyrexia, and pain on swallowing.

The laryngoscope now showed swelling over both arytenoid cartilages, with some ulceration over the right. Examination of the chest gave no constant results. The sputum was examined seven times with a negative result, but a week ago tubercle bacilli were detected on two occasions. The physical signs now indicate infiltration of the apices of both lungs.

Present condition of the larynx: Epiglottis swollen on right side. Much pale tumefaction over both arytenoid cartilages, with sloughy ulceration of the superior and laryngeal surface of the right. Both vocal cords of pale pink colour, and irregularly thickened. At the posterior end of the right cord is a small sessile reddish outgrowth. Vocal cords motionless, lying close together and causing considerable stenosis of the glottis.

Case of Empyema of the Antrum of Highmore. Dr. SCANES SPICER showed this case.

The PRESIDENT congratulated Dr. Spicer on the improved condition of the patient, he having since the operation fourteen days previously gained 11 lbs. The result of treatment in these cases by the members of the Society was most gratifying.

A Case in which a very Large and Hard Fibro-papilloma of the Larynx has caused Indentation of the Opposite Vocal Cord. Shown by the PRESIDENT.

The patient is a man aged about forty, who two years ago began to suffer from hoarseness, soon followed by dyspnœa and complete loss of voice. The difficulty of breathing became so great that tracheotomy had to be performed. Laryngoscopic examination showed an enormous tumour growing from the left side of the larynx, the exact origin of which could at that time not be made out, and completely filling the vocal organ. A fear was expressed that this might be malignant, and external operation had already been contemplated, when Dr. Johnson Smith, of Greenwich, sent the patient to Dr. Semon. The intra-laryngeal removal and subsequent microscopic examination (Mr. Shattock) of some fragments, however, showed that the tumour was of benign character, and it has in the course of several sittings been reduced to its present size, which is about that of a large bean. The interesting feature of the case is the fact that the right vocal cord is deeply eroded, corresponding to the pressure which the growth in its original size exercised upon it.

Mr. SYMONDS asked whether the opposing vocal cord in this case was absorbed or eroded.

The PRESIDENT stated that he could not say at present, as the time since the growth was removed was too short. It was quite possible, however, that absorption had taken place.

Suppuration of Frontal Sinus. Mr. SYMONDS showed this case.

Rev. J. E. consulted me on November 1st, 1892, for a foul discharge from the left nostril of seven years' duration. The left upper first molar had been removed just after the discharge began. For six years he had been under treatment for what was described to him as "necrosing ethmoiditis," and had been cauterized regularly, but without relief. Three years ago a little discharge appeared on the right side, and this was also cauterized. The case was obviously one of empyema of the antrum, probably bilateral. Through the alveolus the left antrum was perforated, and much thick, foul pus forced through the nose. The nasal opening of the antrum was evidently small, and, on examining the nose, the middle turbinated was adherent to the outer wall, and the whole middle meatus blocked with adhesions, the result of the cautery. After removing the anterior end of the middle turbinated the stream came freely. Granulations still remained in the nose, and some pus escaped. In February, 1893, the right antrum was drained through the incisor fossa; much foul pus was found. In May this side was well, and the tube removed. Though little (if any) pus came through the nose when the antrum was syringed, pus, sometimes blood-stained, was always visible high up. In December, 1894, bare bone could be felt amongst easily bleeding granulations. These were curetted. The diagnosis now was suppuration in the ethmoidal or frontal sinuses, or both.

January 21st, 1895, he called with swelling in the centre of the forehead, evidently suppuration. A week later (January 28th) I incised in the median line over the centre of the fluctuating area, and let out a good deal of foul pus. A large opening in the frontal bone to the left of the median line led into the frontal sinus. All nasal discharge had ceased while the pus was collecting; a curved probe was easily passed into the nose. A piece of gum-elastic bougie was passed into the nose and retained. Later, a small silver canula of a length to just enter the sinus was inserted, and through this the bougie was passed. The sinus was daily irrigated with boric acid, and later Sanitas.

When shown to the Society rather less than three months from the opening of the abscess the discharge was mucus only, no pus escaped from the nose, no granulations were visible, and the bare bone felt by a probe passed through the nose into the sinus no longer existed. The left antrum for a long time gave no pus, the tube being retained as a precaution only.

Remarks.—The site at which the spontaneous opening formed seems the best at which to open the sinus, *i.e.*, just to the left of the median line, and half an inch above the level of the eyebrow. From here a drain can easily be passed into the nose, and retained by means of a projecting

lip. This, covered with a piece of plaster, is by no means disfiguring. I think it much superior to the opening at the inner corner of the eye, through which it is difficult to pass a probe or drain into the nose, and I would suggest this site as the appropriate one for making the external opening. When both sides are involved, a median opening, either a long one or with a flap, will be best. The long period covered by treatment in this case was partly due to the neglect of the irrigation of the left antrum. The rigid tube at first employed gave much pain when introduced, but so soon as the wire one was substituted this inconvenience disappeared, and the antrum rapidly became healthy.

Ordinary Meeting, May 8th, 1895.

Occlusion of Right Posterior Naris. Shown by Dr. J. B. BALL.

F. H., aged twenty-one, has had obstruction of the right nasal passage as long as she can remember. She has always been troubled with frequent discharge of mucus from right nostril. A probe passed through the right nostril is arrested at the region of the posterior cavity by a hard, resisting structure, apparently bony. There is no passage whatever for air through the right nostril, either with inspiratory or expiratory effort. By anterior rhinoscopy the right nasal passage is seen to contain a quantity of clear, viscid mucus. There is a slight deviation to the left of the anterior part of the septum near the floor. By posterior rhinoscopy the left choana appears larger than normal, the distance of the posterior margin of the septum from the left Eustachian tube being greater than from the right tube. The right choana is completely occluded by a smooth reddish structure which joins the septum, not at its posterior margin but a little anterior to this, there being a distinct depression along the line of junction. To the finger the occluding structure feels firm and resisting. This patient was seen by me some six and a half years ago, when the condition and appearances were the same as now. The occlusion is no doubt congenital. Operative treatment was declined on the former occasion, but the patient is now inclined to have something done.

Mr. CRESSWELL BABER thought this was a case of congenital occlusion like a case he had shown to the Society. He had pushed through the obstruction and dilated under an anæsthetic: no tube was worn afterwards.

Dr. DUNDAS GRANT had a case he had treated by perforating with a trocar and introducing a vulcanite tube, which, in answer to Mr. C. Symonds, he stated the patient had to wear from time to time.

Mr. C. SYMONDS had a case in which the edge of the septum touched the outer wall. He had sawn out a portion with a Bosworth's saw.

Paralysis of Right Vocal Cord. Shown by Dr. J. B. BALL.

M. A., aged eighteen, came under observation at the West London Hospital in October, 1894. He complained of some weakness of the voice which had existed for about three months. On laryngoscopic examination the right vocal cord was found to be fixed in the position of complete paralysis, although there was some slight movement of the right arytenoid on phonation. He had no cough, and repeated examination of the chest at this time failed to discover any definite physical signs, and there was nothing in the case to point to the cause of the paralysis. He was next seen towards the end of December, when he had some cough, and then there was found to be some impairment in the percussion note at the right apex, front and back, and some crackling *râles* in the same region. His cough has left him for the last two months and he has gained in weight, but the breath-sounds are weak at the right apex, and there is some dulness on the right supraspinous fossa together with some crepitant *râles* in deep inspiration. The diseased process at the right apex, which is probably tubercular, gives a clue to the cause of the paralysis of the right recurrent laryngeal nerve, but the paralysis of the right vocal cord was in this case the first sign of disease to be discovered.

Dr. CLIFFORD BEALE had some doubt whether the paralysis could fairly be put down to the presence of apical disease. Cases of unilateral paralysis of one cord were by no means uncommon where no pleural or pulmonary disease existed, and as no pathological cause could be found for them they were generally classed as "functional." Cases of adhesion of the pleura at the right apex were, on the other hand, exceedingly common, but seldom produced paralysis.

Case of Large Mass of Malignant Glands in the Neck, with Paralysis of the Corresponding Sympathetic Nerve and Immobility of the same side of the Larynx. Shown by Mr. BUTLIN.

An engine driver, fifty-six years old, who four months ago had noticed a lump on the left side of the neck. About the same time he had begun to experience slight difficulty in swallowing.

At the present time he had a large mass of apparently malignant glands in the neck, extending from the clavicle up to the level of the hyoid bone. His voice was very hoarse, and he could only swallow solids with difficulty. The left side of the larynx was completely fixed, but healthy in appearance.

There were typical signs of paralysis of the cervical sympathetic, narrowing of the palpebral fissure, contraction of the pupil, absence of sweating on the corresponding side of the head and face. There was no reddening of the left side of the face and ear, which were a little paler generally than the corresponding parts on the right side.

Mr. BUTLIN believed the primary affection to be malignant disease of the left side of the œsophagus very high up, and not producing so much stricture as it does when the disease is lower down. He had reported an almost precisely similar case in the "St. Bartholomew's

Hospital Reports," vol. xxix., p. 103, 1893. In that case there was scarcely any suspicion of malignant disease of the œsophagus until it was found after death. Yet there was a very large mass of glands in the neck, which had produced paralysis of the cervical sympathetic nerve, and immobility of the same side of the larynx.

Mr. C. SYMONDS stated that he had asked Mr. Butlin whether it was not a case of malignant disease of the thyroid, as there was a large nodule on the right side, and Mr. Butlin had replied that he had a similar case previously, which he thought had been disease of the thyroid, but that, *post-mortem*, carcinoma of the œsophagus was found.

Case of Paralysis of the Right Vocal Cord of Uncertain Origin.
Shown by Mr. BUTLIN.

A woman, twenty-eight years of age, a cook, who was suffering from chronic enlargement of the tonsils, and complete paralysis of the right vocal cord, which was in a position midway between adduction and abduction.

In the middle of January of the present year she had been attacked suddenly by a very severe cough. In March the cough ceased, and she lost her voice quite suddenly.

The exhibitor had expected, from the history of the case, to find "functional aphonia," and was surprised to discover immobility of the vocal cord. The cause of the condition had been diligently sought for, but thus far without success. There was no history or appearance of catarrh (the larynx was perfectly healthy in appearance). No symptoms of disease of the brain or spinal cord. No tubercular or specific history. No history of injury.

No improvement took place during her stay in the hospital, except that her voice improved, and became almost of normal strength.

Dr. S. SPICER considered that as the paralysis was unilateral, functional paresis was excluded.

Case of Laryngeal Stenosis. Shown by Dr. DUNDAS GRANT.

F. P., aged twenty-eight, was admitted on the 31st January, 1895, complaining of inability to breathe, except through the tracheotomy tube he was wearing in September, 1894.

He had been sitting up ten days convalescent from typhoid fever, when he complained of a sore throat. Difficulty of breathing set in three or four days later, and tracheotomy was performed.

Condition of the larynx on admission.—*Vocal cords*, considerably obscured by the swelling existing around each *arytenoid*, were swollen and red. The *cartilages* were more or less fixed and immobile, the right one completely so. There was a rounded inflammatory swelling at the posterior part of the right vocal cord, merging into the inter-arytenoid fold, which was much swollen. Perichondritis was provisionally diagnosed. A later examination showed granulations at the posterior extremities of the vocal cords, and evidence of web formation in the anterior commissure.

On the 4th February, after removing some valve-like portions of tissue projecting into the tracheotomy wound, dilatation of the stenosed glottis was attempted by introducing an india-rubber conical dilator through a special tube introduced upwards into the wound.

On the 7th February a laminaria tent was introduced from the tracheotomy wound, and left for some hours in the glottis.

By these means the breathing aperture was enlarged, so that by the 11th February some amount of breathing could be performed through it.

On the 11th March, after recovery from an attack of influenza, complicated with pneumonia, the web formation was divided with a Whistler's knife, and the smallest intubation tube passed in. The next day a larger one was used; the breathing was distinctly improved, but the effect was not sufficient to justify the postponement of operation. On the 17th the larynx was opened. The tracheotomy wound was enlarged three inches upwards in the middle line. All the soft parts over the thyroid cartilage were found to be matted together, and the latter was with difficulty exposed. Some granulation tissue was scraped away from the posterior wall of the larynx and bare cartilage was felt, but whether cricoid or left arytenoid was uncertain. The original opening in the trachea was also enlarged, granulations were scraped away, and the finger introduced in both directions found plenty of room. The breathing was much improved. The parts were then transfixed with silver wire and brought together.

A tracheotomy tube with an upward limb was introduced, but the patient could not tolerate it.

On the 8th April the glottic chink was so much more patent that the tube was taken out during the daytime, and the hole plastered over.

On the 6th May, introduced a dilator. Patient has passed a whole night with wound closed, but still wears tube during a portion of the day.

Case of Syphilitic Perichondritis of the Larynx. Shown by Dr. WILLIAM HILL.

A female, aged thirty-four, who had applied at St. Mary's Hospital, a week before, suffering from sore throat and loss of voice. There was a clear history of syphilis, and on examination the swollen and congested ventricular bands were seen to meet on the middle line, except for a short distance posteriorly, where a little of the right cord could be observed fixed and ulcerated; the right arytenoid region was swollen, and pus could be seen issuing from an ulcerated surface on the pharyngeal aspect of this region; the larynx was distinctly tender on pressure. Under iodide of potassium the local condition had slightly improved.

Specimen of Pachydermia Syphilitica Diffusa. Shown by Drs. A. A. KANTHACK and W. JOBSON HORNE.

The larynx with portions of tongue and trachea attached was sent by Dr. Engelbach to the Pathological Department at St. Bartholomew's

Hospital, with a note that it had been removed from a woman, aged twenty (married—one child—no miscarriage), who kept a brothel, and who for two years and a half had suffered from a very bad throat. In December of 1894 she had extreme dyspnoea, and died suddenly before tracheotomy could be performed.

The glottis was much narrowed. The epiglottis was entirely destroyed. The surface of the root of the tongue and of the interior of the larynx and trachea was studded with closely-set papillomatous-like excrescences.

Vertical sections were made through the anterior end of the right ventricular band, through the posterior parts of the ary-epiglottic folds, and horizontal sections were made through the trachea.

Under the microscope there was found no loss of substance, nor destruction of epithelium, but the sections showed a thickening and heaping up of the epithelium together with a metaplasia of the cells from the cylindrical to the squamous variety, even in the trachea. Immediately beneath the epithelium there was an abundant small round cell proliferation, which extended into the deeper parts, and cells were found scattered between the muscle fibres. In places where the cells were more closely packed, retrogressive changes had commenced.

Dr. CLIFFORD BEALE observed that confusion was likely to arise if such cases were to be indiscriminately classed as "pachydermia," as the lesions both in form and situation differed absolutely from that which was usually described under that name.

Mr. C. SYMONDS thought the case looked more like diffuse syphilitic ulceration rather than pachydermia.

Case of Tubercular Ulceration of Nose and Pharynx. Shown by Mr. C. A. PARKER.

F. McC. came to the hospital about February 7th, 1894, complaining of stoppage in nose of two to three years' duration, and was found to have hypertrophy of his inferior turbinate bone, which was removed on the right side with the cold snare.

Two or three days afterwards there was some epistaxis. About two weeks after the operation, ulceration was found to be present over the turbinate bone. This was at first treated by simple means, but it spread steadily and made its appearance on the pharynx.

Some little time later it was curetted, and painted with lactic acid frequently, and was improving rapidly towards the end of the year, at which time—in October—he went into the country. After his return, he attended at the Brompton Hospital for Diseases of the Chest.

In March, 1895, his *weight* was 8 st. 8½ lbs. ; on May 7th, 8 st. 3 lbs.

Examination of Chest.—In April, 1894, marked flattening of left apex anteriorly with diminished movement and impaired percussion note. Vocal resonance and fremitus were both +. Bronchial breathing with numerous moist crepitations.

Night sweats occurred, but not much expectoration.

May 4th, 1895, examined again. But slight impairment of note.

Respiration jerky; expiration prolonged, with tendency to hollowness. No crepitations could be heard. Vocal resonance and fremitus slightly +.

Dr. CLIFFORD BEALE commented on the comparative rarity of tubercular lesions in the nose and the importance of their early recognition and treatment by lactic acid. The corresponding lesions on the tongue and soft palate were more often recognized in their early stages, and were quite amenable to such treatment.

Microscopical Sections illustrating the Histology of Turbinal Hyperplasias. Shown by Dr. PEGLER.

The sections largely corroborated the views put forth by Wingrave, in a paper read before the last meeting of the British Medical Association at Bristol. Dr. Pegler had, however, been led to take a somewhat simpler view of the morbid changes, so far as his observation had gone, since, in every specimen examined, he had found mucoid degeneration in greater or less degree, and in no instance a true hypertrophic condition of the sinus walls. This applied to growths taken from any point along the free border of the inferior turbinate, from the middle turbinate, and from the septum. Special attention was directed in section (1)—(normal inferior turbinate)—to the walls of the sinuses, constituted by strands of visceral muscle-fibre crossing in all directions, and interlaced with bands of the wavy areolar tissue of the part. No. 2 was taken from a typical "anterior hypertrophy" of the inferior turbinate, the external contour of which was deeply convoluted, showing long finger-like processes in the section. This character was probably answerable for the fact of "papilloma" being commonly applied to such growths, but instead of a dense coating of stratified epithelium (altered by irritation?) with a thin line of vessels included, we had here a primary vascular outgrowth in a mucoid matrix, put forth apparently from the main body, and bordered by delicate ciliated epithelium. Attention was next called to the mucoid degeneration of areolar tissue, conspicuous in the lymphoid and general submucous area of the growth. Comparing carefully with the normal, it would be seen that this change had conspicuously attacked the walls of the venous sinuses, the mucoid thinning out of the areolar element throwing into prominence the muscular constituent, and creating an appearance of actual muscular hypertrophy. Sections 3 and 4 showed what were probably later stages of the pathological process (apparently progressive in character), the muscular trabeculae themselves disappearing till a mere rim surrounding some of the spaces remained. Wingrave believed that dilatation followed this atrophic stage, and proposed the term *turbinal varix* to designate it, but he also recognized a hypertrophic condition of the sinus walls in other cases. The remaining sections were from polypoid hypertrophies of the middle turbinate, and wall of the septum. The septal growths were mucoid, and œdematous in the dependent portions, but contained numerous glands and sinuses towards the pedicle. This was evidently the structure of most septal proliferations, true papillomata being quite rare.

Mr. CHARTERS SYMONDS had not sufficient experience in these cases to criticize.

Dr. BRONNER considered them most interesting.

Dr. S. SPICER thought we ought to get rid of the name hypertrophic rhinitis, and call the condition by some more suitable one.

Dr. PEGLER, in reply, stated that his observations were strictly limited to the sections he had shown, and though he had not as yet met with what appeared to him to constitute true tissue proliferation or hypertrophy of the sinus walls, he did not deny the existence of those conditions. He might have to alter his views; there were many sources of fallacy, and much still remained to be worked out.

Case of Fistula in the Neck. Shown by Mr. W. R. H. STEWART.

C. G., aged nineteen, was shown at the January meeting of the Society. He had been operated on several times, and when shown the sinus was nearly healed. It was quite healed a few days afterwards. Owing to adverse criticism as to whether an operation in this case was justifiable, Mr. Stewart brought the case again forward to show that it was possible to cure these cases by operation. In answer to Dr. Hill, Mr. Stewart stated that the dissection was carried back to the foramen cæcum.

Specimens of Polypi from the Antrum. Mr. SYMONDS showed several polypoid masses, some of them three-quarters and half an inch long, which he had removed from the right maxillary sinus.

The patient, a woman, aged twenty-five, had the right second bicuspid extracted for pain. There was no discharge from the nose. Soon after this a swelling projected through the socket, and was removed; a second soon followed. When first seen by Mr. Symonds, two pear-shaped gelatinous masses projected from the socket formerly occupied by the tooth. That these were not connected with the gum was shown by the fact that a probe could be passed all round them, and entered the antrum. The anterior wall of the antrum was removed, and the polypi which were attached to the inner and posterior wall were removed by a sharp spoon. The largest measured about seven-eighths of an inch in length. They were all attached about the same site and projected downwards. The aperture in the alveolus was much enlarged, and the polypi which projected through the opening were paler in colour and had a denser covering.

Large Nasal Polypus from a Patient aged eighty-seven. Shown by Mr. C. SYMONDS.

This was a large mass with a portion of the middle turbinated, that had been removed by the cold snare. It is composed of many pendulous masses, and when removed was in outline as large as the palm of the hand. The walls of the nasal cavity had been much absorbed.

A Post-Nasal Sarcoma. Shown by Mr. C. SYMONDS.

Case of Pachydermia Laryngis. Shown by Mr. C. SYMONDS.

This case was that of Mr. H., exhibited on several previous occasions.

The mass had nearly disappeared, so that the original view of the case has been confirmed. For three weeks the patient has resumed his duties as a schoolmaster, and during this time the greatest change has taken place for the better.

Case of Laryngeal Disease. Shown by Dr. HERBERT TILLEY.

S. E., male, aged forty-nine. "Complains of hoarseness and sore throat." Patient had syphilis about ten years ago, and was treated for it. About eighteen months after contracting the disease, he began to complain of his throat. It has been getting worse and worse, and he applied to the hospital early in February last, when he was at once put on anti-syphilitic treatment.

At first he improved, complained of less pain and easier breathing, but recently he has remained *in statu quo*.

There is no history of phthisis in family. There is a history of hæmoptysis when he was eighteen years of age. Recently he has been getting weaker. Altogether the history of phthisis is very indefinite, and the only physical signs in the lungs are those pointing to slight consolidation in the left apex.

There is a prominent granulation in the arytenoid space on left side. Left processus vocalis swollen. Over position of right vocal cord is a swollen mass of tissue which looks something like a large granulation. There is no fixation of the vocal processes beyond that due to inflammatory thickening. There is considerable laryngeal stenosis.

Dr. TILLEY was inclined to consider it a case of syphilis.

Dr. SPICER and Mr. STEWART considered it a case of tubercle.

Dr. BRONNER thought it was syphilitic and recommended mercurial inunctions.

Dr. TILLEY stated that Mr. Butlin had suggested that it might possibly be malignant.

Aerztlicher Verein in Nürnberg. Meeting, Jan. 5th, 1895.

HELLER showed a patient, fifty-seven years old, with carcinoma of the soft palate. The disease began with a warty growth, which was removed with scissors. Now it is an ulcer with hard walls. *Michael.*

Königliche Verein der Aerzte in Budapest. Meeting, March 3, 1895.

IRSAI showed two cases of *goitres* cured by feeding with thyroid gland. *Michael.*

Wiener Laryngologische Gesellschaft. Meeting, April 4, 1895.

PANZER showed a case of *Nævus Vasculosus* of the soft palate, situated on the left portion of the palate, and consisting of three isolated parts. The affection was congenital. Treatment was not necessary.

STOERK had observed an *Angioma Cavernosum* on the tonsil. By means of a ligature it was possible to destroy the tumour without any hæmorrhage.

GROSSMANN had observed a *Fluctuating Tumour on the Tonsil*. It was an aneurism. It was cured by ligature of the carotid.

ROTH also had observed *Vascular Nævi in the Mouth*.

STOERK had observed *Hæmoptysis* caused by vascular ramifications on the uvula. Destruction of the tumour by nitric acid brought about a cure.

HAJEK has cured *Recurrent Bleeding of a Venous Tumour* of the lingual tonsil by the application of chromic acid.

KOSCHIER showed a *Recurrent Lymphangioma*, situated on the ary-epiglottic fold. Now the tumour is much increased, and suspected to be a sarcoma.

CHIARI showed *Two Nasal Stones*, which he had removed. One was from a girl eleven years old, and had as centre a fruit stone. The other was from the nose of a woman sixty years old, and showed as centre a piece of slate. The same patient had a congenital osseous atresia of the left choana. The author also showed some rhinoliths from cases already published.

EBERSTEIN showed a case of *Laryngeal Tuberculosis with Abscess of the Right Vocal Band* the size of a pea. The patient had also had an abscess of the epiglottis.

Michael.

Obituary.

WILHELM MEYER,

Born October 25th, 1824, died June 3rd, 1895.

AN exceptionally active and useful life was brought to a close on the 3rd of June, when one of the foremost representatives of our specialty, WILHELM MEYER, passed away in his seventy-first year.

HANS WILHELM MEYER was born in the year 1824, in the Danish town of Fredericia, where his father, who was at that time a surgeon in the Danish army, lived. From 1826 to 1843 WILHELM MEYER was educated at Glückstadt, in Holstein, to which place his father had been removed with his regiment. After the latter date WILHELM MEYER went to Copenhagen to study medicine at the University, and so great was his industry that he finished his medical studies as early as 1847, although the usual time employed for this purpose was seven years. He, moreover, passed his final examinations unusually brilliantly ("*laudabilis et quidem gregie*"), and thus early gave promise of his future renown. After having acted as his father's assistant, MEYER went abroad from 1851 to 1853, studying pathology and therapeutics at the universities and hospitals of Würzburg, Prague, Vienna, Montpellier, Paris, London and Edinburgh. On this journey he formed friendships with many members of the profession, who remained his sincerest friends until the last.

After his return, MEYER settled down in Copenhagen as a general practitioner, and by degrees, owing to his great conscientiousness and devotion to his patients, collected one of the largest general practices in the city, which practice he kept until his death.

It is indeed wonderful that a man who was so fully occupied as MEYER should have found time to devote himself to a specialty, and still more wonderful that he became one of the most distinguished members of that specialty; both facts, however, are only a proof of MEYER'S marvellous industry and unquestionable genius. But the admiration for

our deceased colleague becomes still greater when we learn that it was his noble and sympathetic heart which first pointed to the path in which he has since done such good and lasting work. The circumstances were as follows : in his general practice MEYER often met with patients who were rendered almost desperate by deafness, noises in the ears or severe pains in the ears—cases which most medical men at that time tried to get rid of, when syringing out of the meatus or instillation of oil or milk did not produce any beneficial effect. WILHELM MEYER, however, endeavoured to obtain as much information as possible in the diagnosis and treatment of ear-diseases through the few then-existing otological works, and thus quite autodidactally he became the famous otologist of his time.

It was whilst practically investigating ear diseases that MEYER made the discovery which will for ever be connected with his name : the discovery of adenoid vegetations in the naso-pharynx. On the 22nd of October, 1867, he took under treatment a young girl from Jutland, who was suffering from considerable deafness ; he observed besides that the patient was almost entirely unable to breathe through the nose, in spite of his treatment of a chronic catarrh of the nose and pharynx. He came to the conclusion that the obstruction to the nasal breathing must necessarily be situated in the naso-pharynx, and he found, on passing his finger up behind the soft palate—what, strange to say, few medical men seem to have done previously in similar cases—that the naso-pharynx was filled with peculiar growths, on the removal of which the patient's nasal breathing became perfectly easy. MEYER now surmised that the girl's ear disease had been caused by these growths, and on examining other ear-patients he discovered the same disease of the naso-pharynx.

With the energy and perseverance so peculiarly his own, he now continued his investigations of these hitherto almost unknown growths, which it is true had been observed by some few earlier investigators, but without any exact description of them having been given, much less had they recognized their great practical importance. At the end of 1868 MEYER published his first account of adenoid vegetations in the Danish medical paper "*Hospitalstidende*." In 1869 "*Schmidt's Jahrbücher*" gave a report of the work, and in 1870 MEYER published his extended investigations in the "*Medico-Chirurgical Transactions of London*," without, however, general attention being drawn to the great importance of the disease. It was first when WILHELM MEYER, in 1873, published in "*Archiv für Ohrenheilkunde*" an exhaustive and complete description of the etiology, morbid anatomy, symptomatology, sequelæ, and treatment of adenoid vegetations—a description which is in every way a thorough classical work, to which nothing of any importance has since been added—that the discovery was generally recognized, and the discoverer awarded the position among specialists which he held till his death.

Besides several minor works connected with his specialty, MEYER published in 1884, in "*Archiv für Ohrenheilkunde*," an excellent article proving the important part which necrosis of the walls of the tympanum plays in the etiology of chronic suppuration of the tympanum, and during

latter years he was engaged in collecting the materials for a large work on adenoid vegetations. He, however, only succeeded in finishing the introductory chapter of this work "On the Age and Extension of Adenoid Vegetations," which appeared as an article in the Danish medical paper "Hospitalstidende" quite recently.

But MEYER was even greater as a man than as a physician, for in him were united in an unusual degree the best qualities both of heart and head. His remarkable intellectual gifts were evinced in his surprising memory, his acute observation and his pronounced critical powers, which latter were very frequently directed to himself and his own scientific work, of which the least arduous cost him considerable time, so that he wrote but seldom and unwillingly. Thus, for instance, his article on the history of otology in Schwartz's "Handbuch der Ohrenheilkunde" took him over a year and a half to write, although it is only a few pages in length; but it is also with justice considered a perfect standard work on account of the great learning displayed and the elegance of style. To these qualities must be added an almost unique industry and power of work. MEYER was never unoccupied; when he returned home in the evening after a hard day's work, which besides three or four hours' consultation often included between thirty and forty professional visits, he hardly ever rested, but as a rule read until far into the night, and his reading embraced all subjects—natural science, philosophy, literature, religious works; in fact, everything which can interest a man of education.

It is needless to say that he kept pace with everything new in the medical world. His information on all subjects was unusual. He was, further, an enthusiastic musician and astronomer, and frequently passed both summer and winter nights engaged with his telescopes. Finally, he was an accomplished linguist, and at the International Congress in Copenhagen—when he was president of the laryngological and otological section—was much admired by his foreign colleagues for the ease with which he spoke the three official languages.

But it was MEYER'S nobility of heart, which he often hid under a reserved and formal exterior, that made the deepest impression on all those who came in more immediate contact with him. His loving and sympathetic nature was especially apparent in his relations with his many patients, for whom he sacrificed himself entirely. He was also a faithful friend, whose worth was especially felt in times of adversity.

MEYER received the marks of honour which generally fall to the lot of great medical men, comparatively late in life. He received the Swedish order of Nordstjernen in 1880, as an acknowledgment of his treatment of the sons of the King of Sweden; in 1884 he was made honorary doctor of the University of Halle, and in 1894 he received the Danish title of "Etatsraad." He was also honorary member of several foreign scientific societies, amongst others, of the American Laryngological Association and of the London Laryngological Society.

During the last spring MEYER suffered from a severe attack of influenza, which weakened him considerably, and he, therefore, went to Italy to recruit his health. Apparently he had recovered entirely, but on reaching Venice on his homeward journey he was attacked by a disease

called by the Italian doctors typhoid fever, which, in a little over a week, overcame MEYER'S otherwise healthy constitution, and he breathed his last on the evening of the 3rd of June.

WILHELM MEYER'S loss will be sincerely felt by many, but the memory of a life so rich in thought and feeling will remain for ever with those who knew him, and his name will be preserved as long as the medical art endures.

Holger Mygind.

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**OPERATION of TURBINOTOMY performed for the first
time in INDIA :**

Its Effects on Affections of the Ear.

By H. J. DADYSETT, L.R.C.P., L.R.C.S., L.M. (Edin.),

Consulting Surgeon to the Church Gate Street Ear and Throat Dispensary,
Fort, Bombay.

A YOUNG Parsee girl named Miss G., aged about twelve, was brought to me on the 8th July, 1894, at the Church Gate Street dispensary, Fort, for constant catarrh of the nose and acute pain and watery discharge from the left ear. She had been suffering from catarrh of the nose for the last six years. The discharge from the ear was then foetid and watery and of three years' duration, and the pain in the ear began latterly. The discharge from the ear is said to have followed after an attack of fever from which she suffered about three years ago. For this she was dosed, according to her statement, with large doses of quinine by her medical adviser. She also complained of buzzing noises in her left ear, which were so very distressing that she appeared to be a miserable object to look at. She had no cough, no pain on swallowing, her senses of smell and taste were not impaired ; but her respiratory system clearly indicated that she used to breathe with difficulty from her mouth. She also stated that when she left her bed in the early morning, she always noticed her tongue to be dry and parched.

On making a laryngoscopic examination of her mouth and fauces I noticed them to be congested, and stray granulations like small beans were seen on the posterior surface of her pharynx and on the posterior pillars of her fauces. On examining her ears with a reflected light from

a laryngoscope, I found the external auditory canal excoriated, and thin watery discharge running down to the speculum from the middle ear. I washed the discharge with tepid water and a few drops of lysol, and on examining her ears I found a small round perforation of the membrana tympani in its posterior quadrant, whilst the ossicles were intact. On testing her hearing power I found that she could hear a watch at five inches distance, and could distinctly hear when spoken to in a low tone.

On examining her nose by means of Lennox Browne's nasal speculum and making anterior rhinoscopy, I found a dull red mass of hypertrophied mucous membrane over the inferior turbinated bone, projecting in the left nostril from its side to the middle of the septum and completely blocking up the nostril commissure. Her heart sounds were a little accentuated, otherwise the rest of her other systems were normal.

On the 8th July, 1894, I prescribed for her ears boracic acid drops and for her nose menthol snuff. I used to wash her ears every other day, and continued on the same treatment for about a fortnight, when the discharge from her ear had completely ceased; but the catarrh of her nose and the noises in her ears remained unabated.

Operation, August 6th, 1894.—As she was troubled with the difficulty of breathing and noises in her ears, I had decided to perform the operation of turbinotomy on her.

The patient was made to sit on a chair in the usual position for nasal operation, and the head was steadied by my assistant, Dr. Sahiar. After freely cleaning the nostrils with an antiseptic douche and applying cocaine, 10 per cent. solution, to the inside of the nostril, and swabbing the solution well over it, I introduced Dr. Carmalt Jones' spokeshave into the nostril, which I had got purposely made to order by Messrs. Arnold and Sons, of West Smithfield, when I was in London. The knife was introduced with its cutting edge directed towards the diseased turbinal, whilst the guarded index finger of the left hand was passed by the mouth into the post-nasal space and directed to the ring of the knife into its proper position around the varix. The shaft was then directed slightly towards the opposite side of the face and sharply but firmly withdrawn in this direction, cutting its way through the turbinated body, which escaped at the same time. Bleeding was profuse for a few minutes, but was easily controlled by cauterizing the part with Botcher's cautery, so as to give the patient a radical cure. The nostril was then plugged with boric lint smeared with iodoform and moistened with carbolic oil, 1 in 40, and left in for twenty-four hours, and the patient was asked to take perfect rest in the semi-recumbent position. The plug was removed on the second day, and neither discharge nor hæmorrhage was found. The nostril was gently cleaned with Dobell's solution, which contains—

℞ Acid carbolica	grs. vi.
Sodæ bicarb.	
Sodæ biboratis	āā grs. xv.
Glycerine	ʒi.
Aqua	ad ʒvi.

and repacked with boric lint, iodoform, and carbolic oil, as before.

The same plan was adopted for about a week, and then iodoform

powder was insufflated for a week more until the part healed up entirely. The patient can breathe well now, as there is no obstruction; there is no catarrh, no pain, and no discharge from her ear, and the noises, too, have disappeared altogether.

THE BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.¹

SEVENTH ANNUAL SUMMER MEETING.

July 25th and 26th, 1895.

The Surgical Treatment of Disease of the Ethmoid Cells. By Dr. D. BRYSON DELAVAN (New York).

Gentlemen,—No more appropriate question could have been chosen for this discussion than the surgical treatment of suppurative disease of the ethmoid cells; although excellent progress has of late been made in connection with it, there is yet much to be learned, not only with regard to the utility and application of the various operations themselves, but also to the results which may ultimately follow them.

Through the admirable work done, within recent years, in the anatomy of this region, the general structure and arrangement of the parts have been fairly explained, and the vast number of abnormalities and deformities which may occur in them has been, to a certain extent, appreciated. The peculiar intricacy of the region, however, and the frequent and sometimes exaggerated departures from the normal above mentioned, frequently obscure diagnosis, and render treatment difficult, if not actually hazardous.

In dealing with the ethmoid cells, it must be recognized that they are multiple, and that treatment directed to one or two of them, when others are affected, will fail of its object. The possible existence of the peculiar enlargement of the middle turbinated body, described by the author a number of years ago, and further explained by later observers, should be remembered, and the part which it may take in general ethmoidal disease recognized. In this an abnormal expansion of the turbinated body is found to consist in an inflation of its walls, with great increase in the size of its cavity, which latter being lined with mucous membrane, renders them liable to various forms of disease. In general, it may be said that suppurative disease of the ethmoid cells is usually caused by some acute process attended with occlusion of their normal outlets. This condition soon becomes one of acute suppuration, in turn becoming chronic with

¹ The Editors regret that, owing to delay in completion, they have not yet received the report from the Editorial Committee of the Association. It is hoped, however, that the full report of the discussions, and other papers not yet to hand, will be published in the September number of this Journal.

retention of the morbid products and the formation of what is, practically speaking, a chronic abscess. The obstruction to the drainage of the cells may be due to causes located in the canal itself, to thickening of the soft parts in the neighbourhood of its mouth, or to the deformities of the middle turbinated body, or of the septum in the same situation.

In the history of cases of ethmoid disease, the beginning of the trouble is usually referred to an attack of acute nasal inflammation of some kind. The expression "cold in the head" has long ago ceased to satisfy us. Certain peculiar forms of coryza, notably that commonly occurring with grippe, seem remarkably prone to be associated with or followed by it. The suspicion of a specific infection is still further intensified by the bacteriological studies of recent observers, so that the chain of circumstances seems to have been made tolerably complete, and, briefly stated, would consist in inflammation of the lining of the cavity, possibly from entrance into it of an infectious element; intumescence of the mucous membrane, with occlusion of the canal; accumulation of secretion which, after a time, becomes purulent; abscess, and, as a final result, the local changes and various reflex irritations naturally following such a cause. In some cases the etiology is obscure.

In this brief *résumé* the suggestions as to the indications for treatment seem obvious.

Undoubtedly the golden opportunity for it is afforded in the early stage of the disease, and while it is yet acute. It cannot be too strongly urged that cases of severe coryza should be taken carefully in hand, and, at the earliest intimation of involvement of any of the sinuses, particular attention paid to allaying the irritation and to keeping the outlets of the adjacent sinuses as patent and as free from secretion as possible. Greater attention to this very evident matter would probably prevent much of the necessity for later surgical measures.

When chronic disease has actually developed it still may remain a question whether, in a given case, extreme radical measures may be required or not. While the importance of conservatism cannot be too strongly urged, the fact must be recognized, that there are some cases in which the symptoms are so dangerous that the necessity for their relief is absolutely imperative. The indications present in all cases seem to depend, without question, upon the absolute and thorough drainage of the one or more affected cavities or sections of the collection of cells known as the ethmoid sinus, and upon persistent cleansing and disinfection of them, and the removal from these cavities of all diseased and therefore offending tissue.

These principles, skilfully carried out, form the basis of the most successful treatment yet known. In operating, the first requisite is a good illumination, with the best possible exposure of the parts. At once we find in most cases that the anterior section of the middle turbinated body not only hinders drainage, but also effectually conceals the base of the ethmoidal region from view. The first thing to be done, therefore, is either to cause the obstructing tissue to subside sufficiently to admit of the necessary examinations and manipulations temporarily under the influence of cocaine, or to remove it altogether. The latter will generally

be required before a satisfactory result can be obtained. If the obstruction consists of enlargement of the soft tissues alone, it may easily be overcome. Sometimes, however, the bone itself must be attacked.

The extent to which the middle turbinated body should be removed has been a matter of some controversy.

I cannot help regarding wholesale destruction of it, especially where not absolutely demanded by the exigency of cases which in my experience have been unusual, as distinctly objectionable. The judicious exsection of a limited portion will generally give sufficient access for all practical purposes.

As to the manner of removing the turbinated, that instrument or class of instruments should be selected which can be manipulated with the greatest accuracy and with the least tearing and fracturing of the tissues which it is intended to leave behind. When the end of the turbinated body is suitably shaped, the snare is one of our best resources.

The ethmoidal region having been exposed, it will often be found that the space between the middle turbinated body and the outer wall of the nasal cavity has been more or less completely occupied with polypi. Whether the latter are the cause of the ethmoidal disease or a consequence of it is at present an unsettled question. My own opinion inclines to the latter view.

The thorough removal of these growths is, of course, a necessary step. For its accomplishment, in addition to the instruments commonly employed, I have found a small ring knife useful, or the Jarvis snare threaded with wire of unusual fineness. Access having thus been gained to the cell outlets, it will sometimes be possible in the less severe cases to obtain relief by simply keeping the parts well cleansed and by building up the general condition of the patient. In the serious cases such treatment will not be likely to prove effective, and radical measures will be required if the urgent symptoms of local irritation and reflex pain are to be removed. These consist in the thorough opening up of the diseased cells. To meet this end several plans are recommended. Thus, Bosworth advises that a small round or oval burr attached to a dental engine be made to enter the ethmoid cells and cause the removal of such bony fragments as it may be desirable to destroy. If the burr be attached to a suitable motor its motion can be instantly arrested at will, when it may be made to act as a probe for exploring the cavity for such parts as should be removed. Bosworth does not advise that the operation should necessarily be completed at one sitting, but states that in many cases the process may have to be repeated a number of times at intervals varying from a week to a month and often longer. Bryan, Schaefer, and others favour the use of a sharp spoon, while others prefer a sharp curette such as the instrument devised by Myles. The latter, furnished with a flexible shaft, is a valuable instrument in the treatment of many conditions other than the one under discussion. Small cutting forceps in various shapes may be used with advantage, and although possessed of great power may be made sufficiently small to be admitted into all the narrowest spaces. In operating it is necessary to remember the importance of thoroughly exposing the affected cells and of removing all of the causes

of irritation, such as thickened membrane, polypoid masses and necrosed bone, which may be within them.

Following operation the cavities should be thoroughly washed and afterwards dusted with some good disinfectant or packed with gauze, and this repeated as often as may be necessary. Such a case should be seen at frequent intervals by the surgeon, and never allowed to remain long away from his observation until sufficiently advanced towards recovery.

The pathology of suppurative disease of the ethmoid cells having been fairly explained, and the principles of treatment thoroughly understood, it becomes necessary to recognize the fact that the measures advocated for the more serious cases are exceedingly severe. Removal of portions of the turbinated bone, and entrance into the cells, are not accomplished without considerable pain and subsequent irritation, and, moreover, the parts are left in a state of mutilation at once unnatural and calculated to interfere with their ordinary functions. That all of this may be demanded through the failure of other methods and the urgent necessity for relief is proved by the success which has often attended it. Nevertheless, it is wrong to regard radical operation otherwise than as a serious thing, and one not lightly to be entered upon. Without question, the difficulties in the way of diagnosis, the extreme intricacy of the region, and the important, if not actually dangerous, injury likely to be inflicted by unnecessary or incautious surgical interference, all demand that such cases be managed with the greatest conservatism. Over treatment is a grave error, and one certain to reflect gravely upon the surgeon. Conducted with proper skill, the surgical treatment of ethmoidal disease is capable of producing most gratifying results. After all has been said and done in the matter, there still remains an hitherto unsolved question of too great interest to be ignored, namely, are radical operations on the ethmoidal cells likely to lead to permanent disability of the parts attended with objectionable symptoms?

To this question I would best leave to call your particular attention.

Contribution to the Surgical Treatment of the Accessory Cavities of the Nose. By Dr. LUC (Paris).

Gentlemen,—My aim, in joining in this discussion, is simply to present to you the result of my personal experience on the subject. In fact, since the beginning of my special practice, I have been induced by circumstances to devote myself with a sort of predilection to the study and treatment of empyemas, first of the maxillary, then of the frontal sinus. I published, six years ago, in the "*Archives Internationales de Laryngologie et de Rhinologie*," a critical review on *Empyema of the Antrum of Highmore*, which, I think, greatly contributed to initiate the French medical public to Von Ziem's remarkable and, I may say, revolutionary articles on the subject.

Last year I published in the same paper, and in the "*Semaine Médicale*," the history of three women whom I had successfully operated upon for suppuration of the frontal sinus, and I called the attention of my readers to the progress successively realized, from one patient to another, in my experience and method of treatment. Since then a new

fact enabled me to get a more precise view of that hard clinical problem. In some of my patients suffering from suppuration of the frontal sinus, the anterior ethmoidal cells were implicated in the disease, and required an intrusion of the surgical treatment to their cavities.

I have had on no occasion any case of sphenoidal suppuration under my care. I will, then, systematically omit the latter affection from my study, hoping that, though thus limited, this essay will not be quite destitute of interest for you, and will perhaps contribute to the progress of our ideas on the subject before us.

I will say little on suppuration of the antrum of Highmore, having but little to add to the generally accepted views on the surgical treatment of that affection.

Generally speaking, it may be said that its radical cure is one of the most difficult tasks proposed by clinical practice. One of the reasons commonly advanced to account for that difficulty is the rigidity of the walls of the antrum of Highmore, a condition common to all accessory cavities of the nose; but there is another and not less important reason, and here the maxillary sinus differs from the other accessory cavities: I mean the impossibility of creating a communication between the lowest part of this sinus and the nasal fossa, which represents the natural outlet for its secretions. In consequence of these unfavourable conditions, our hope of obtaining a radical cure of a somewhat protracted suppuration of the antrum of Highmore must be founded on an energetic treatment of its internal surface, such as can only be effected through a large opening of its anterior wall.

I am, therefore, firmly convinced that the latter operation is the single one to be proposed to the patient, if the suppuration persists for some months, after the alveolar opening has been made, in spite of the various means (injections, insufflations, cauterizations) generally had recourse to in such circumstances, and which, taking into account the narrowness of such an opening, can be effected but *blindly, and at random*. When the anterior wall of the maxillary sinus has been opened according to the method I adopted after reading Jansen's interesting article on the question, the situation is totally different. In fact, the opening I make is such as will admit, at the end of the operation, my index finger, and during the following period a common speculum nasi, which enables me to inspect minutely the cavity, just as if I had to do with the nasal cavities or the larynx, and to treat *not blindly*, but with the utmost precision, by means of curette or caustic, any lesion of its surface suspected of maintaining the suppuration.

I need not add that the same large opening gives the operator a great facility for insufflating various powders into the cavity, or plugging it thoroughly with iodoform gauze.

Since adopting this method, I have had the satisfaction of obtaining a complete cure, after a lapse of five or six months, in cases that had resisted other methods of treatment.

I consider it a *sine quâ non* of such a result that the patient, after undergoing the operation, does not slip away from the operator but continues to be observed and treated by him as long as is necessary.

I hasten now to broach the question of the surgical treatment of the frontal sinus, which, as already mentioned, has been the subject of my special attention and interest for the last few years.

In order to give you a clear idea of the gradual improvements which my treatment underwent until I adopted my last surgical method, I deem it best to give you a summary of the clinical observations of the four patients whom I had the opportunity of operating upon.

All four were women. The first three were affected with an empyema of the right sinus. In the last one, on the contrary, the suppuration occupied the left cavity, and I draw your attention to the fact that this is the only example of an empyema of the left frontal sinus among six which came under my observation.

The history of the first three patients has appeared in the "*Semaine Médicale*" and in the "*Archives de Laryngologie*" of last year, whereas the observation of the last has not been published yet.

The first of my patients, about fifty years of age, had been complaining for the last six years of a foetid purulent discharge from the right nostril. There was neither pain nor swelling in the frontal region.

After finding the middle meatus of the nasal fossa full of pus, I first thought I had to do with an empyema of the maxillary sinus, inasmuch as the first large molar was carious; but after opening the antrum Highmori through the socket of that tooth, I found it contained no pus, and I proposed, therefore, the opening of the frontal sinus, which was accepted. After making an incision along the internal third of the eyebrow and the corresponding edge of the root of the nose, I opened the anterior wall of the sinus by means of chisel and hammer, on its lowest portion, making the opening the size of a sixpenny piece, and found the sinus filled with pus and granulations which I removed carefully with a curette. I then introduced through the frontal canal an india-rubber drain which was fixed by means of thread and collodion, its upper end protruding out of the wound and its lower one out of the nostril. Injections with a solution of boric acid were performed daily through this drain during the following fortnight, which was then removed and the wound allowed to close.

After a lapse of two months, the signs of suppuration, which had been temporarily suppressed by the operation, appeared anew. I then proposed, and was allowed to perform a more radical operation. The sinus was laid open again, but this time I removed completely, by means of cutting forceps, its anterior wall, only respecting the orbital area. The fungosities which had reproduced themselves were scraped away, and the bony surface touched with a solution of chloride of zinc (one in ten). The space between the skin and the deep wall of the sinus was then plugged with iodoform gauze. This plugging was renewed during the following weeks, with a progressive diminution of the gauze employed, as the integument progressively adhered to the deep bony wall from the periphery to the centre. Only after a lapse of about six months of regular wound-dressing I let the wound close, the patient recovering with a deep sinking of the skin. I cannot say that the suppuration was thoroughly stopped, as the middle meatus continued to present for

months, though intermittently, a small quantity of pus, which I attributed to a participation of the anterior ethmoidal cells in the disease.

If I sum up this case, we see that the patient had to submit herself to a double and severe operation, and to the necessity of having, for months, her head dressed with a bandage, and all to get an imperfect result.

The next patient, a girl, sixteen years of age, presented already, when she first applied to me, signs of an extension of the suppuration to the deep tissues of the upper eye-lid, in the course of an unrecognized chronic empyema of the right frontal sinus.

After removing the anterior wall of this sinus, I found it full of pus and granulations, extending to the ethmoidal cells. I removed the granulations with a curette and, while doing so, destroyed the greatest part of the floor of the sinus, and thus involuntarily created a large communication between the frontal and the nasal cavity. The bony surface was then touched with a strong solution of chloride of zinc (one-third), and, after plugging the open cavities with iodoform gauze, I left the wound widely open. The dressing was left *in situ* for eight days. After removing it, I proceeded to a careful rhinoscopy, and could easily realize that the frontal sinus was distinctly visible and largely accessible through the nasal fossa.

This suggested to me the plan of closing the wound at once, and effecting the drainage through the nasal fossa, in order to spare young ladies, in the future, the inconvenience of a disfiguring scar. For that purpose a big drainage tube of india-rubber was pushed through the nasal cavity into the frontal sinus, its lower end being kept immovable at the entrance of the nostril by means of a thread fixed to the cheeks with collodion. The lips of the wound were then put into contact by means of strips of iodoform gauze and collodion.

The adhesion of the latter was soon effected, except at the internal extremity, which remained fistulous for a while. Two weeks later, the fronto-peripheral swelling, which had completely disappeared in consequence of the operation, showed itself again after an unfortunate attempt to substitute a strip of gauze for the drainage tube, which proved that gauze cannot be considered as a substitute for a drainage-tube. The alarm awakened by the reproduction of the swelling was but temporary, as this symptom completely vanished two days after the reinstatement of the tube. As long as the latter remained *in situ*, injections with a boric solution were daily performed through it. During the first days the liquid could be seen gushing out of the fistulous extremity of the wound. When this took place no more, I applied a light compressing bandage to further the closing of the fistula.

Two months after the operation, no appearance of purulent discharge being observed through the tube, I removed it permanently, the young patient being instructed to perform injections into the nasal fossæ whilst the canula was directed towards the region of the frontal sinus.

A month later, the girl was completely cured, and the rhinoscope showed the internal surface of the sinus white and dry, with no appearance of suppuration or granulations. This clinical observation was invaluable to me, as it showed me the possibility of closing the wound

much sooner than was generally done, and at the same time spared the patient many months of dressing.

In this young lady's case the closure of the wound had been effected secondarily. I resolved to avail myself of the next occasion to close it primarily, after fixing the drainage tube in the sinus at the end of the operation.

This occasion soon presented itself. About the time when I was dismissing the former patient as cured, I was consulted by a lady, thirty-six years of age, who had been complaining, for the previous three weeks, of violent pain in the right half of the forehead, complicated with purulent discharge from the nostril of the same side. I noted by rhinoscopy that the pus came from the middle meatus and, as the electrical illumination of the mouth had not allowed me to detect any difference between either maxillary cavity, I stated we had to do with an acute empyema of the right frontal sinus, and proposed operation, which was agreed to, and performed on the following day.

On the sinus being opened by removal of a part of the anterior wall, corresponding to a shilling in size, it was found full of pus, but contained no granulations. After cleaning it I perforated, by means of a drill, the floor of the sinus, and enlarged the opening with a curette, which I then directed to the ethmoidal cells, supposing they might also contain pus. I then introduced through that opening into the nasal fossa, till it projected out of the nostril, a Panas' silver curved probe, and fastened to it a drain, which, by drawing the probe from below upwards, was lodged deeply in the sinus, its inferior extremity being fixed at the entrance of the nostril.

The wound was sprinkled with iodoform, then sewn up, and tightly dressed.

On removing the dressing, three days later, the wound was found completely healed. After a lapse of a week further dressing of the wound was given up. Two days later the drain, which had been made use of for daily antiseptic injections into the morbid cavity, was definitely removed.

A fortnight after the operation the patient could be considered as completely cured, and presented, as consequence of the treatment, a hardly visible scar.

My attempt had here been a complete success, but my satisfaction, in order to be complete, required the application of the same method not to a case of acute frontal empyema, but to a chronic case complicated with granulations. Such was the case of the fourth patient, whose history follows.

Mrs. R., thirty-three years of age, servant, came to consult me in my dispensary last March, complaining of a foetid purulent discharge from the left nasal fossa, dating from three years back, and complicated, for a few months, by a feeling of painful tension over the eyebrow.

Rhinoscopy showed the middle meatus filled with myxomatous masses and creamy pus, and the electric illumination of the face gave a complete darkness of the left cheek and inferior eyelid, contrasting with the translucency of the right half of the face. It was then evident that

the left maxillary sinus contained pus, but taking into account the integrity of the large molar teeth and the pain awakened by pressure on the supra-orbital region, I diagnosed double empyema of the frontal and maxillary sinus, the latter consecutive to the former.

On the 23rd of March the left maxillary sinus was widely opened, under chloroform narcosis, and found filled with offensive pus and granulations, which were carefully scraped away. The cavity, which easily admitted the index finger, was then cauterized with a solution of chloride of zinc (one-tenth) and plugged with iodoform gauze.

During the following days, suppuration persisting in the middle meatus, in spite of the complete cleansing of the maxillary sinus, there could remain no doubt but that it was derived from the frontal sinus, which was opened a week later, according to the above described method (2nd of April).

It was found filled with creamy pus and granulations, extending deeply between both plates of the frontal bone, and down in the anterior ethmoidal cells. After a thorough curettement of the cavity, a Panus' probe was passed through the bony opening, down into the nasal fossa, then out of the nostril, and a big india-rubber drain fastened to it was then introduced through the nostril up into the sinus, and fixed by its inferior end, by means of a thread, to the cheeks. The cavity of the sinus was then filled with iodoform powder, and the wound sutured and dressed with iodoform gauze and wadding tightly applied.

During the following days an injection was gently made through the drain, with a lukewarm solution of fluorol (4-1000).

On the 6th of April the dressing was removed, and the wound looked quite healed.

17th of April. The drain was removed on the following day. I noticed that the mesial and inferior end of the wound had reopened, letting escape a drop of pus.

A careful examination of the nasal fossa enabled me to account for the failure of my method. In fact, the middle meatus had been insufficiently cleaned of the polypi which filled its cavities, and the consequence of it was, that no sooner had the drain been removed than the communication insufficiently established between the sinus and the nasal fossa had become shut off at once.

28th of April. After a careful examination of the middle meatus, the myxomas were curetted as thoroughly as possible; but the rather profuse hæmorrhage provoked by this operation obliged me to plug the region tightly with salol gauze and to leave the plugging *in situ* during forty-eight hours. There I had again an opportunity of ascertaining how inferior gauze is to rigid tubes as a means of draining. In fact, I found the patient, after that interval, presenting a swelling of the supra-orbital region, which proved clearly that pus, as well as blood, had been stopped by the plugging. Of course the swelling disappeared shortly after the removal of the gauze; but a new inspection of the nose brought me to the conviction that, the communication between the sinus and the nasal fossa being insufficient, such accidents as the last observed were liable to reproduce themselves. Palpation of the supra-orbital region gave to the

finger a doughy feeling which, in accordance with the fistulous condition of the inferior end of the wound, made me suspect that fungosities had reproduced themselves in the sinus, and were reaching the deep surface of the skin. Those considerations led me to the decision of performing anew the operation, with the aim of destroying, as completely as possible, the floor of the sinus,¹ and extending the curettement to the anterior ethmoidal cells.

Before putting my plan into execution I tried it on several dead bodies, and ascertained that, after a sufficiently large opening of the anterior wall of the sinus, the posterior and greatest part of its floor could be removed by means of a fine grooved chisel, applied perpendicularly to it, but that, owing to its considerable thickness, the anterior part ought to be respected, in order to avoid a fracture of the neighbouring orbital arch.

The operation was performed on the 27th of May, and, as expected, I found the deep surface of the skin and the cavity of the sinus invaded by freshly developed granulations, which I carefully curetted, even in the deepest recesses of the cavity. The floor of the sinus was then destroyed by slight blows, by means of a fine grooved chisel, from behind forward. Then the curette was directed towards the middle meatus and the ethmoidal cells. Lastly the cavity was filled with iodoform powder, a drain tube bigger than that used the first time pushed into the frontal cavity, and the wound sutured immediately.

The dressing was this time left days *in situ*. Every day an injection was made through the drain tube with a solution of sublimate (1-4000), and immediately afterwards a solution of iodoform in sulphuric ether injected towards the sinus by means of a Pravaz's syringe provided with a long canula, which was introduced into the tube up to the entrance of the sinus; my intention in doing so was to keep, as far as possible, the bony cavity in an aseptic condition.

When the dressing was removed after a lapse of eight days, the wound seemed perfectly healed up and the threads could be removed.

The dressings were renewed and the same local treatment continued till the 7th of June, when no more dressing was applied to the wound, and boric solutions exclusively injected into the tube.

I had then a fine prospect of a quick recovery when a slight accident made me fear for a while a new miscarriage of my method.

On the 14th of June, while washing her face the patient tugged involuntarily the threads that kept the inferior end of the tube fixed, causing the exit of the latter from the sinus, the opening of which was probably shut up by its walls after an unsuccessful attempt of the patient to replace it in its former position.

At all events I was most disagreeably surprised, when, on seeing the patient three days later, I noted a new swelling of the left half of the forehead, and a drop of pus occupying the mesial end of the wound, which was a sort of very small fistula.

¹ This destruction of the floor of the sinus having as a consequence the direct communication of this cavity with the nasal fossa, and the possibility of inspecting it subsequently by rhinoscopy, can be compared with the destruction of the external wall of the attic in Stacke's operation on the ear.

After removing the drain tube completely I was able to realize plainly that its accidental bad position could alone be held responsible for the pus retention, for no polypi could be detected in the middle meatus, and, in consequence of the partial destruction of the floor of the sinus, this cavity was in large and direct communication with the nasal fossa. I then applied a new and tight dressing to the wound, and prescribed daily injections in the nose after teaching the patient to direct the canula upwards towards the opening of the sinus.

The patient's condition is actually (beginning of July) the following:—The wound is completely healed. There is no swelling of the supra-orbital region, nor any other sign of retention of pus. The suppuration, though notably diminished, persists, forming a deposit of green or yellowish crusts in the upper region of the nasal fossa only if the patient neglects her daily injections, even a single day. The crusts are easily expelled by means of an injection directed towards the breach made on the floor of the sinus, but another injection made through that breach, by means of a curved canula upwards and forwards, expels a new quantity of pus of creamy appearance.

Injections performed through the narrow fistula, to which the large opening of the maxillary sinus is now reduced, still cause the expulsion of a small quantity of muco-pus.

In the course of July the suppuration of the frontal, as well as the maxillary, sinus presented a gradual diminution.

On the 22nd of this month I found no pus in the nasal cavity, though no injection had been made for the last five days.

The cure was obtained in this case within two months, which is not likely to seem a particularly long time to those of my colleagues who have had to deal with the difficulties of that specially refractory class of empyemas of bony cavities characterized by a remarkable abundance and power of reproduction of granulations. The various accidents met in the course of the treatment, one of which brought me to the necessity of repeating the operation, will be easily avoided in the future by more decision in destroying the floor of the sinus, and by a modification of the form of the drainage tube likely to prevent its escaping from the sinus. That modification would consist in an enlargement of the upper end of the tube, making it resemble those employed by Prof. Guyon, of Paris, after certain operations on the bladder. Such a drain, of course, ought to be introduced from above downwards, which is not likely to meet any particular difficulty.

I am happy to say in conclusion that Dr. Panus, the able professor of ophthalmology of Paris, did me the honour of applying my method in several of his patients affected with ocular complications in the course of suppuration of the frontal sinus, and declared himself highly satisfied with the result obtained in every case.

Clinical Considerations on the Treatment of Empyema of the Frontal Sinus. By Dr. E. J. MOURE, Professor at the Faculty, Bordeaux.

My aim is not to study here the various symptoms which characterize chronic suppuration of the frontal sinus, nor to review before you the

detailed anatomy of these regions of the nasal cavity. I shall confine myself simply to the statement that we can clinically distinguish two kinds of sinusitis: (1) Those which empty externally in consequence of enlargement of the naso-frontal canal and the infundibulum, either because the very fluid secretion creates a ready way across these channels; (2) a class which is characterized by the nearly complete or absolute absence of suppuration, *i.e.*, veritable latent empyema, which it is necessary to discover by means of the various methods of investigation at our disposal to-day. The first variety of these inflammations of the frontal sinus is little or not at all painful, the second, on the contrary, determines the appearance of pre-orbital or frontal neuralgias, which constitute an important element of diagnosis.

In the suppurative sinusitis the frontal cavities and their passages are enlarged, but the middle and inferior turbinates remain small, so that the unciform apophysis appears very clearly upon rhinoscopic examination, and it is very easy to place in the entrance of the fronto-nasal canal a canula, or even in its interior, which allows of the pushing of an injection into the dilated frontal sinus, and often into the anterior ethmoidal cells, which are cleansed in its passage.

In *latent empyemas*, on the contrary, the osseous septum (perpendicular plate of the ethmoid) is oftenest displaced on the affected side, so that the middle turbinate, distorted, comes to hide the middle meatus and touch the inferior turbinate. No luminous ray can be projected towards the probable orifice of these cavities (frontal and maxillary), and direct treatment, by this means, is absolutely impossible. All the more ought we to, in such cases, arrive at some means of making penetrate some fluid in the direction of the sinus supposed to be affected,¹ to enable us thus to establish a definite diagnosis. It is to this class of cases, and to those intermediary, that I reserve, systematically, surgical treatment. Every time that the spine of the unciform apophysis is hidden, and that I am certain of having to do with a frontal or anterior ethmoidal suppuration, I do not hesitate to practise extirpation of the anterior half of the middle turbinate. This proceeding has generally given me excellent results, either by permitting more direct treatment of the affected part, or by opening a larger path for the thick and viscid secretions which flow with so much difficulty from such sinuses, narrow, and very slightly open.

Extirpation of this turbinate has never been followed by any accident. It is practised at our clinique at Bordeaux, with the cold snare, or by preference with the double gouge forceps, of form and calibre varying according to the size, small or large, of the nasal fossæ operated upon. Ablation of the middle turbinate changes a little the anatomical relations of the region, but one soon gets accustomed to this new state of things, which also allows the patient with rebellious sinusitis to use the handkerchief freely and to suffer no longer. This is, alas, the only end we can attain to in many cases of suppuration of the accessory cavities of the nose.

¹ It is well understood that every hypothesis of maxillary sinusitis is eliminated from our mind, and that we have in view only inflammations of the frontal cavities,

En résumé, without being as absolute as Hajek and Hansberg, I estimate that it is necessary to remove the anterior half or one-third of the middle turbinated in all cases when a frontal sinusitis is painful, and that the inferior orifice of this cavity is not easily accessible to means of exploration and ordinary treatment. This is the only aim of my short communication on this interesting subject.

The Treatment of Chronic Laryngeal Stenoses. By Prof. MASSEI (Naples).

Gentlemen,—The local treatment of chronic constriction of the larynx may be considered from many points of view, in relation to the operation, or consecutive to tracheotomy: the radical or the palliative cure; a temporary improvement or a complete recovery; pure laryngeal stenosis or laryngo-tracheal stricture. In order satisfactorily to answer these, as questions, it would involve enumerating, one after another, each different morbid condition which produces a narrowing, and one by one the treatment they severally require.

But time will not permit such a procedure, and one is thus compelled to classify more practically all the different causes leading to the same effect, the therapeutical alleviation of which we desire to study, in order to avoid repetition, and to be more concise.

Firstly, a distinction is necessary between pure laryngeal stenoses and those which may be termed hypoglottic. Both equally claim our attention, not alone from the fact that there are constrictions limited to the hypoglottic tract, but also because the symptoms presented by these cases are frequently those of laryngeal stenosis, and because their treatment is frequently endo-laryngeal. Secondly, a clinical distinction arises between severe and slight stenoses, the former directly dangerous to life, the latter allowing time for suitable treatment. I say clinically because we meet sometimes with cases in which the organic stricture is not far advanced, but where spasm is present these patients suffer considerably, and on account of this additional nervous complication run the risk of asphyxiation. In slight as well as in the severe forms we must separate those morbid conditions capable of complete cure from those which are not. These premises will, I hope, lighten my task, which I will now commence.

The hypoglottic tract is the seat of predilection of several interesting morbid conditions, namely, syphilis, tubercular growths, rhinoscleroma, etc., also foreign bodies.

Perhaps a casuistic statement will scarcely show the relative frequency of such morbid states; however, from personal observation I am convinced that the true nature of some hypoglottic stenoses are not yet clearly known.

1. Foreign bodies which pass through the larynx in a vertical position may easily change this for a horizontal one, and lodge in the subglottic region, for instance, needles, pins, bones, fishbones, etc.

2. Tubercle may, in rare instances, respect the larynx and attack the subglottic region, either in the form of an infra corditis, or by a destructive infiltration, with subsequent granulations, adhesions and bridle strictures.

3. Chronic inflammation of the subglottic mucosa can give rise by

acute exacerbation to severe stenosis, the so-called "chorditis inferior." Anatomically we have to deal with an œdematous infiltration of the thin mucous membrane which continues from the lower surface of the cords to the lateral walls of the windpipe; hence a subcordal swelling diagnosed laryngoscopically during inspiration.

4-5. But considering their frequency, sufficient attention is not devoted to syphilis and rhinoscleroma. These two morbid conditions are apt to produce thin diaphragms in the upper windpipe, with round or elliptical central openings, sometimes so small that air passes with great difficulty. Rhinoscleroma may occur as a primary infection by Frisch's bacillus, and in which the local change, whether a septum or a true diaphragm, may conceal its true character; and more correctly would be termed simply scleroma, or perhaps better, an infectious scleroma of the upper air passages.

6. Finally, I must mention growths, not those arising from the free edges of the vocal cords and hanging into the hypoglottic space, but those arising from their lower aspect, or the lateral walls of the subglottic space.

All these morbid conditions are to be considered similar to the laryngeal, *i.e.*, they are accessible through the larynx, and so will be considered with those laryngeal stenoses about which we have to inquire. Do they allow or not of (endo-laryngeal) treatment *per vias naturales*? The degree of constriction is one of the first things we have to observe before selecting our treatment. Is it slight? If so, is complete recovery possible, obtainable by general treatment or by local treatment, or by a combination of the two? Is it, on the contrary, severe? We must consider whether general treatment can quickly abolish the risks of suffocation, carefully watching the patient, or should an operation be necessary, can it be done without danger *per vias naturales*, and in so satisfactory a way as to completely cure or to minimize the dangers of stenosis? Should this not be possible, we may perform a palliative tracheotomy or intubation, postponing radical cure until after the danger of suffocation is passed.

I flatter myself, gentlemen, with having condensed into a few words my address on chronic laryngeal stenosis, and that I may be able to better explain my ideas by entering a little into details.

There are, without doubt, cases of laryngeal stenosis, which are capable of cure by general treatment alone, and I must place first amongst these laryngeal syphilis, whose most classic and frequent form is a circumscribed inflammation of the mucous membrane, with or without ulceration, and but little accompanying œdema.

In these cases, according to my long personal experience, which corresponds with that of the first Italian physicians, we prefer the hypodermic administration of corrosive sublimate (this salt showing marked superiority to all others), associated or not with moderate doses of iodide.

Iodine may also exhibit its beneficial effects in rheumatic arthritis of the crico-arytenoid joints; unfortunately, the effects are by no means constant in the chronic forms, and ankylosis or luxation of the arytenoids

consequently strictly resemble the same effects of syphilis, tuberculosis or traumatism, which are thus a cause of dangerous and persistent stenosis. Persistent laryngeal œdema as a sequence to the removal of a morbid condition may cause a moderate laryngeal stenosis.

Rest of the organ and iodine often conduce to a complete *restitutio ad integrum*, even without local applications or methodic dilatation.

In chronic inflammation, with a certain amount of narrowing, the local application of astringents by brush, sponge or spray may be successful without other treatment.

Foreign bodies and growths, which reduce the glottic aperture, but not excessively, can be successfully removed by the endo-laryngeal method, especially with the aid of cocaine and all the perfect laryngeal instruments which experience and genius have placed in our hands.

Stenosis produced by a chronic inflammation (simple inflammation or neoplastic) unaffected by operative treatment by forceps, curettes, knives, &c., may be cured by dilatation, however performed, though preferably by metal tubes—intubation.

Briefly, laryngeal stenoses of slight degrees are curable by general remedies or with local applications, or with a laryngeal operation, into details of which it seems superfluous to enter in the presence of such eminent colleagues, or, finally, by dilatation according to the nature of the morbid process and its form.

In well-marked stenosis the responsibility of the practitioner is different, and the consideration which presents itself to his mind before all others is the following : Will the case allow of general treatment, and is it dangerous to perform any endo-laryngeal operation? Usually we believe too firmly in anti-syphilitic treatment, and this excessive faith may cost the life of some patients.

I do not deny that in certain severe cases when tracheotomy was already suggested mercury or iodine has been able to produce marvellous effects, but once more I must insist that when confined to the larynx, syphilis sometimes requires great care, and something more than general treatment. Perichondritis, indeed, is one of the gravest of its manifestations, inasmuch as though of a specific nature the anatomical changes are not such as recede without surgical treatment. Swelling in the most usual position, *i.e.*, the region of the cricoid, or the crico-arytenoid joint, cause marked stenosis, which even not causing urgent symptoms, general treatment is not sufficient to remove the morbid deposits.

Gummatous syphilitic chondritis, which I first pointed out some years ago, whose structural changes exactly correspond with those of a sub-chondritis, although of a specific nature, also is not amenable to general treatment, and not rarely requires surgical treatment. This example which I have selected is sufficient to show, that with a few exceptions, even when specific treatment is able to effect a complete cure, syphilitic laryngeal stenoses require prompt aid, or where the specific cure is attempted they must be carefully watched.

There are, on the other hand, morbid conditions which could be treated by endo-laryngeal means, *e.g.*, a papilloma, but the constriction may be so marked that a lethal spasm may follow any attempt; hence

the indication is to open the trachea previously, or to be ready to operate immediately, if necessary.

This is a point of great practical importance—they are common in the early years of life, when both laryngoscopy and endo-laryngeal operations are both difficult. Cases occur to me similar to those recorded in literature, in which the attempt to remove them with forceps caused dangerous spasm, and I was obliged to hurriedly perform tracheotomy; and once I lost my patient (a boy of twelve years) through a severe spasm which occurred half an hour after I had left the hospital, after several successful removals of a diffuse papilloma.

This untoward accident convinced me that, in children who suffer with papillary growths, complicated with severe stenosis, preliminary tracheotomy is the proper course to pursue. These growths may undergo spontaneous cure after a simple tracheotomy, and I was able to remove the canula one year after the tracheotomy, in a boy, aged seven years, who was cured, and with no other treatment.

Narcosis, true, by rendering a child less restless, removes some difficulty in the endo-laryngeal operation, but when we think of the tendency these growths have to recur, to the necessity of many attempts, and to the splendid results of tracheotomy, we cannot deny the great advantages of the latter.

I criticize the suggestion of some (they are general surgeons) who, in these cases, propose thyrotomy or laryngectomy.

Experience teaches us, not only that recurrence is rapid, but that they occasionally disappear spontaneously; also that they are more easily cured with simple treatment only.

When the danger to life obliges us to renounce endo-laryngeal treatment, or to try it, but fully prepared to face the most serious consequences, two courses present themselves, tracheotomy and intubation; when shall one be chosen—when the other? Before answering this question, I shall include for this purpose those cases where endo-laryngeal could be done, but without permanent benefit to the stenosis—I mean cases of diffuse infiltration, or such morbid conditions (lupus, lepra, tuberculosis, cancer), in which cure is problematic or impossible, and thus shorten my task.

It is not immaterial whether tracheotomy or intubation in this or that case of chronic laryngeal stenosis is not suitable to endo-laryngeal or general treatment.

It depends on (1) the form of the stenosis, and (2) on the nature of the disease giving rise to stricture.

There are morbid conditions of the larynx in which its cavity is so deformed that no tube, even one of the finest, will pass through. Amongst these may be enumerated adhesions, cicatrices, diaphragms, as well as multiple growths and foreign bodies impacted, and occluding the glottis.

Perhaps intubation might be performed after the removal of such obstructions in order to complete dilatation, if necessary, but as a primary operation, in order to render safe an endangered life, tracheotomy is advisable, and this is often the only rational treatment. Of course, it

is easy to understand the great value of the laryngoscopic mirror, which enables us to make a mathematical diagnosis of the structure. Foreign bodies in the larynx, or, still more, in the hypoglottic space, firmly impacted, and accompanied by a large amount of œdematous infiltration or severe spasm, furnish no difference or distinction in treatment, and tracheotomy will surely be the simplest procedure for reaching and removing the foreign body.

The nature of the disease is, on the other hand, of no less interest in suggesting to us the right treatment to follow.

I am firmly convinced that intubation will succeed more than tracheotomy in proportion to the curability of the disease. Cancer, tuberculosis, lupus, rhinoscleroma, bilateral paralysis of the posticus indicate tracheotomy, cancer, when laryngectomy can no longer be performed, and the treatment should be simply palliative.

In tuberculosis, great advantage to the general health and the local disease is generally observed. (The operation is, of course, only to be performed if the general conditions and the state of the lungs allow it. Intubation, on the contrary, is only to be performed to save the patient from immediate danger of suffocation.)

In bilateral paralysis of the postici the permanent cause of the obstruction would tie the physician so strictly to the patient, in order to repeat the intubation whenever necessary, that the preference of tracheotomy seems evident to me, the more so when we consider that the operation does not deprive the patient of his voice, which is suppressed by the disease.

I know of cases in which intubation has been preferred, but I do not see the reasons which give it the preference. This applies likewise to lupus, lepra and rhinoscleroma, which are difficult to treat, although I am interested in cases in which, after dividing diaphragms, or freely curetting the hypertrophic tract, subsequent intubation has been performed; but the recurrence of the disease and the necessity of repeated operations justify in many cases the preference of tracheotomy.

In cases not included in this list the practitioner must always have in his mind the laws we have discussed in order to have a sure and rational guide in the selection of the treatment, especially in syphilis, when the morbid condition (perichondritis, for instance, and its sequelæ) gives rise to a permanent stricture, although the general infection be perfectly cured.

I cannot omit to mention that, in chronic laryngeal stenoses after tracheotomy, in the treatment adopted for removal of the canula, intubation presents a method of dilatation which offers the greatest advantages over all previously known, and I have to remark that when a large tube cannot be passed through the constriction we can begin with a common catheter. I have been able to succeed in this way in very obstinate cases.

The size of the tubes may be large; if in children, 5-6 are sufficient for patients from one to twelve years of age; in adults the tubes must be adapted to the development of the larynx and the degree of constriction. Hence the necessity of having at hand tubes with a small head and a

large body (for young subjects and women with slightly advanced stenoses), and tubes with a large head and a thin body for well-developed subjects with severe stenoses.

Schmiegelow's modification and other similar tubes are very useful in practice, as are also those with a fenester, as proposed by O'Dwyer for subglottic growths, and particularly for granulations—so frequent a cause of difficulty in removing the canula. A fenester in a tube can also have another advantage, as Lichtwitz pointed out, *i.e.*, in operating on laryngeal growths in children, ensuring free breathing, and the removal of the growth with the forceps when present at the fenester projecting into the metallic cavity.

But I cannot leave this subject without observing—

1. In cases of severe stenosis, in which tracheotomy is clearly indicated, but time would not allow of its performance, temporary intubation, provided the form of the stricture allows of the passage of the tube, will render the operation easier, not only by removing immediate danger of suffocation, but also by fixing the larynx and quieting the circulation.

2. That temporary intubation done in cases of imminent danger of suffocation, providing the operation is possible, would give time for reflection, and later to a more rational treatment, and even tracheotomy, if we renounce intra-laryngeal treatment, and the submitting the patient to a constant supervision by the surgeon, who would be obliged to intubate repeatedly and in haste.

Gentlemen, I have preferred to a long enumeration of operative methods in peculiar cases—methods and instruments well known to all—a general description on this very interesting subject. I fear I have been incomplete, but I believe myself not to have forgotten the chief indications which may be a guide to the practitioner in this difficult matter of the treatment of chronic laryngeal stenoses. Trusting to your consideration, I hope the discussion will accord to my contribution the merit it deserves.

On the Surgical Treatment of Laryngeal Tuberculosis. By Prof. Dr. H. KRAUSE (Berlin).

Gentlemen,—Before entering upon my subject I should like to express a few words of hearty thanks for the kind invitation of the President and the Council of this Association to open the discussion on the surgical treatment of laryngeal tuberculosis. I am all the more pleased with this invitation, as I know England only too well to be one of the countries from which the rational treatment of tubercular diseases has originated.

Although we have observed the laborious and unceasing work of those who have for a decennium been aiming at the cure of laryngeal tuberculosis, and who have for this purpose recommended some successful methods, we, nevertheless, find opposed to them at the present moment a number of those who do not wish to acknowledge the success of this treatment, or only acknowledge it with great reserve. However, these opposers do not wish to deny the curability of tubercular destructions, but, principally, they say that this treatment cannot be admitted in general

for tubercular affections, but only in certain suitable cases. This alone is a progress which must not be despised, when one thinks of the great difficulties with which therapeutic questions have to battle—a progress has not been gained too heavily with the work of ten years. This change has not taken place without the influence of a general direction taken by our modern medical science. Albert Ruault, a French laryngologist, who is endeavouring to introduce a new remedy (the “Phénol sulphoriciné”) for the treatment of laryngeal tuberculosis, a remedy which, it must be admitted, is of similar but slower effect than lactic acid, has taken as a motto for the work upon his remedy a remark of Bouchard about the *surgical* tendency of modern medicine, which is:—“Le départ des maladies entre la médecine et la chirurgie, tel qu’on le concevait autrefois, subit une modification profonde Le domaine de la chirurgie s’étend, parceque l’antisepsie a presque supprimé les limites de son action, parcequ’elle arrive à porter partout le remède sur la siège du mal. Tout ce qu’il devient possible de traiter localement devient chirurgical Toutes les fois qu’on peut faire le traitement local, on a chance de guérir ce qui ne guérissait pas.” This remark of Bouchard can also be used for our subject.

Looking back upon the year 1885, when I demonstrated on a *post mortem* larynx in the Berlin Medical Society the first cicatrices of tubercular ulcerations produced by lactic acid—and Virchow, notwithstanding the opposition of the *mort* laryngologists, acknowledged the result, and said that it surprised and confirmed him in the belief that cicatrization of tubercular affections of the laryngeal mucous membrane is quite as possible as that which he remembers to have seen on the intestinal mucous membrane—then I cannot doubt that also the question of to-day, *i.e.*, the surgical treatment of laryngeal tuberculosis will be resolved favourably. I am all the more sure of this after having looked through the discussion which has taken place concerning the experiences in lactic acid treatment at the Naturforscher-Versammlung, in 1886. It will be remembered that I had recommended in 1885 the use of lactic acid for the cure of tubercular ulceration, and shortly after this I had the pleasure of having been seconded in my recommendation of this remedy by Messrs. Jelinek, Heryng, and M. Schmidt.

In the above-mentioned assembly the majority was inclined to confirm my experiences, but, on the other hand, there were a number of important adversaries. At present no opposition worth mentioning against the lactic acid treatment is to be found. It was already in my first publication that, with the idea of making lactic acid act upon deep-lying infiltrations, I recommended scarifications and incisions into the infiltrated tissue. But a systematic action in this question was only arrived at, as Heryng showed that it is not only allowed but even necessary according to surgical principles to excise and remove the tubercular tissue, all the more when by the infiltrations or granulating ulcers the most important body functions are impaired or made impossible. Will a modern physician wonder at our scraping out, down to the wholesome tissue, a tubercular ulceration situated in the skin or in the oral mucous membrane; if we scrape or burn or excise tubercular fungosities of a joint;

if we split a fistula ani or scrape it out and try to bring it to cicatrization? Can there be any sensible reason for preventing the transference of this proceeding to the larynx? I myself do not think so, especially as the modern laryngeal technique has greatly diminished the difficulties of such operations, and makes the idea superfluous that there could be laryngoscopists who object to such operations because of their small knowledge of this technique. Therefore I cannot clearly understand the objection recently made by Jonathan Wright,¹ which is:—"Most of us probably have the wish to see Heryng and Krause at work with their cutting currettes, to observe how these authors distinguish what is diseased in the larynx and what is not, and, above all, how they assure themselves whether they have removed all affected parts." I have often had the pleasure of demonstrating, not only for German, but also for English, French, American, Russian, and other physicians, how accurately one can perform such operations upon the larynx; and I do not doubt that if Jonathan Wright were present at a surgical operation made by an expert's hand he would be convinced not only as to the possibility, but also as to the success of this treatment.

Concerning *the choice* of the cases, I cannot advise the extreme carefulness demanded from many sides. We can really give ease with this treatment even in the far advanced or most desperate cases, and I cannot consent to the opinion that in cases of high fever and decrepitude one should leave the patient to his sufferings and pains, believing that through giving cocaine and morphia one has done one's duty; for, even in hopeless cases, where with such treatment we can unite no thoughts of cure, nevertheless professional experience and duty points to measures which give ease and consolation, all the more as the surgeon feels himself in his right even in the performance of operations in incurable cases or of hysteria.

But with our patients it is even possible, in the latter days of life, to often relieve or remove the most tormenting and depressing difficulties of swallowing by the excision of a particularly painful infiltration upon the epiglottis or one of the ary-epiglottic folds, and to throw a small ray of hope upon the hours of suffering of the despondent dying patient. To give an example of such cases I should like to bring forward the case of a physician's wife, who was brought to me a few months ago by her husband in an almost dying condition. She was in a state of most advanced pulmonary and laryngeal phthisis, but she suffered mostly through difficulty of swallowing, so that she believed she would die of starvation. I found here a perfectly diffused infiltration and ulcerative destruction of almost the entire laryngeal mucous membrane, which, by the enormous swelling of the ary-epiglottic and pharyngo-epiglottic folds, made swallowing impossible. Without any hope of being able to preserve the life of the patient by the operation, I cut considerable pieces out of both folds. Through this the passage became free for swallowing, and the courage of the patient went up. Strange to say, notwithstanding the continuous progress of the pulmonary disease, the larynx became better by degrees, without doubt through the operation, so that up to the

¹ "Internat. Centralblatt," Maj, 1895.

time of her death she had no more trouble from the larynx. Such cases show that it is quite impossible to make the rule general, that far advanced pulmonary affections forbid operations on the larynx.

But it must be remarked that the principal value of this treatment lies in such cases as we can save. At this moment it would be a temptation to bring forward certain cases of very satisfactory and lasting cure ; but I must deny myself this pleasure, because of the number of publications made by others and myself, and because it would not be right of me to take up so much of your time. Looking back upon the great number of cures of advanced cases which have lasted for years or altogether, I feel greatly satisfied with our modern laryngeal treatment, compared with that of the time when tubercular affections were looked upon as a "*noli me tangere*." By personal experience I can say that at that period nothing saddened me more than our helplessness in the face of the long sufferings of these miserable creatures.

Concerning *the performance of the operation* there is not much new information to be given. Our aim must be to get out the diseased tissue down to the wholesome one. Aiming at this, we can scarcely ever hope to finish such an operation at one sitting. One attacks, first of all, the most diseased, and of nutrition or respiration the most dangerous, parts. If matters go on favourably, the infiltration even of unoperated parts soon decreases. Then the affected parts below are to be seen more plainly, and to be reached by the instrument with greater ease. Now we get at these, and so we cut out, advancing slowly and carefully by degrees, the whole diseased tissue, and leave well granulating surfaces whose cicatrization can go on now without hindrance. My opinion is this—that we need not leave out from the operation any diseased part of the larynx. Formerly I was sometimes timid to cut through the epiglottis, or the arytenoid cartilage. But having observed that the cartilages cicatrized perfectly well also, I now treat them upon the same principle as the other parts. It is, as a rule, surprising to see how well the tubercular tissue cicatrizes after operation, although we must admit that there are cases in which the degenerated tissue, as it is mentioned above, cannot be brought to cicatrize or be got away. These are, then, the hopeless cases in which the organism has lost its resistance to the excessive formation of pathological vegetations. Such cases characterize themselves as hopeless at the first operation, because the wounds made do not show any tendency to the production of wholesome cicatricial tissue. To advance and to accelerate the formation of this after the curettage I always use the lactic acid. Neither antiseptic nor other remedies have done so much good as this acid, although I have tried them all without the least prejudice. Infiltrations of small size disappear after operation, often without the need of other remedies.

Having to do with cases which cicatrize satisfactorily from the beginning, we must not confine the operation within too narrow limits if we wish to prevent relapses. It is often surprising to see how deep the infiltrations go. It often happens that in the perspective laryngoscopic picture we cannot see the extension of the tubercular dépôts, and only after the first excision does it become evident that the infiltrations go

further into the tissue than we thought in the beginning. Here we must not be afraid to operate as deeply as we find diseased tissue.

It is nothing new for those who have performed such operations to note how well, as a rule, the patient withstands them. We seldom find after operation symptoms of very high fever or other troubles of the general health, except now and then a light intoxication caused by cocaine. The rule is that they feel better and in higher spirits in consequence of the easier swallowing and the increased nutrition.

Now, as regards laryngeal *relapses*: this question we cannot decide according to the general experiences which we possess about the course of pulmonary tuberculosis. This difference is caused by our surgical treatment, which is, up to now, not usual in cases of pulmonary tuberculosis. Where strength is well preserved and tendency to cicatrization present, we obtain lasting results as often as in the lungs. But I must say that I have watched many laryngeal cures which have lasted until death, whilst the process in the lungs progressed continuously. Thus died, a few weeks ago, a patient of mine from a pulmonary hæmorrhage in far advanced pulmonary phthisis, whose laryngeal tuberculosis I had cured six years ago, and, again, a patient whose larynx I cured in 1888 is now under my attendance in a very bad pulmonary condition. Of course, we find many cases where, in spite of all our pains, we cannot prevent quickly-following relapses, but, as a rule, we must say that, after the introduction of the surgical treatment, laryngeal relapses are rarer than pulmonary ones.

The Technique of the Surgical Treatment of Laryngeal Phthisis.
By Dr. THEODOR HERYNG (Warsaw).

Gentlemen,—When two months ago the President and Council of the British Laryngological Society made the honourable proposition to me to open the discussion on the surgical treatment of tuberculosis of the larynx in the seventh annual assembly, I found myself compelled, on account of my ignorance of the English language, to ask leave to speak French. Thanks to the liberality of the President and the Council, I have the great honour of contributing here to the enlightenment of a question with which I have now been for eight years constantly occupied, and the further development of which has rapidly been attained by the collaboration of many colleagues. The greatest number of the points requiring explanation and elucidation have been already settled at the International Congress of Rome in 1894. Of eighteen colleagues taking part in the discussion, fifteen have pleaded for the necessity of a surgical intervention in certain cases of phthisis of the larynx, founded on personal experience. At Rome, favourable results were reported from Ruault, Prof. Schmidt, Prof. B. Fraenkel, Gouguenheim, Prof. Massucci, Prof. Chiari, Gluzinski, Hoppmann, Fiatau, Lubliner, Sajous; on the contrary, Egidi, Massei, and Garel very warmly recommend tracheotomy; finally Sokolowski, M. Schmidt, and Hoppmann went still further, and asked if it would not be advisable to employ laryngotomy before curetting, upon which subject we already had some information from Prof. Pieniazek, of Krakow.

It is evident that a strict indication can be founded only on very abundant material observed, and it must be equally understood by everybody that a new method can expect its final perfection only through the collaboration of many authorities. These considerations induced the Council to put the question of surgical treatment on the programme of our meeting, and gave me the privilege to enlarge upon points still needing further explanation.

Since I published in the years 1893-94, in the JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY, my opinions on the curability of laryngeal phthisis and its surgical treatment, and further in the same Journal, in August, 1894, the conclusions have been published which I related in the International Congress in Rome and present to you now. I believe it will be better if I leave to my honourable colleagues, Prof. Krause and Dr. Gleitsmann, the indication of those points wanting still better understanding, and ask the President to grant me, after the closing of the discussion, a short opportunity to plead in favour of my thesis.

By this means I think an understanding is to be more rapidly attained, and it is not necessary that I should once more repeat what is already known; in return, I believe I shall meet the wishes of most of my honourable English colleagues if I speak, after the closed discussions, more in detail of the technique of the method, and communicate to them the results at which I have arrived by my own experience, founded on more than three hundred cases.

The Surgical Treatment of Laryngeal Tuberculosis. (Conclusions.)
By Dr. THEODOR HERYNG.

1. Tubercle of the larynx, or, rather, the laryngeal phthisis induced by it, can heal by itself without any local treatment. The ulcers situated on the vocal cords and posterior wall of the larynx heal most frequently; very rarely those more serious cases in which the infiltration and proliferation products are attended with deep ulceration; as also those in which the disease extends to the cartilage, accompanied with aphonia and severe dysphagia, leading rapidly to disintegration, and extension to the lungs.

2. *The chief indications in the treatment of tubercle of the larynx, which is almost invariably accompanied with tubercular disease of the lungs, are hygienic, dietetic and climatic.*

3. As in most cases of laryngeal phthisis severe dysphagia occurs, it follows that *the first and most important indication in the treatment to be considered is the removal of the dysphagia.*

4. The second equally important indication touches the special cases in which the breathing becomes difficult, and symptoms of stenosis appear on account of tubercular infiltrations and proliferation products.

5. The third indication has to do with the recovery of the impaired or lost voice.

6. The healing of deep ulcers of the larynx resting on inflammatory infiltrations, surrounded by proliferation products, and certain forms of localized chronic laryngeal tubercle, is effected quickest by scraping, or rather *removal of the tubercular tissue.*

7. *The surgical treatment is indicated:—*

- (a) In tubercular tumours of the epiglottis.
- (b) In circumscribed chronic tumour-like infiltrations of the posterior wall of the larynx, which show little inclination to break down.
- (c) In chronic tumours resting on an inflammatory base, surrounded with proliferation products, *which resist all other methods of treatment.*
- (d) In partial disease of the larynx, when the epiglottis, false cords and lateral ligaments are affected.

8. *Surgical treatment is contra-indicated:—*

- (a) In advanced phthisis of the lungs, with hectic and wasting.
- (b) In diffuse miliary tubercle of the larynx, or rather of the larynx and pharynx.
- (c) In all cachectic conditions.
- (d) In severe stenosis of the larynx, caused by inflammatory swelling of the affected parts. In these cases, tracheotomy must be performed as soon as possible.
- (e) In patients exhibiting fear and nervous excitability, mistrust of the physician, and who are always changing their doctor, *especially those whose condition promises little hope of recovery.*

9. With the proper application of cocaine, the operation itself is not painful. Submucous injection of cocaine is hardly ever necessary.

10. Pyoktanin (one to two per cent. solution) has proved a very good means of preventing inflammation in the parts operated on. It must be applied to the surface of the wound, twice a day.

11. Recurrence takes place frequently at the place operated on, sometimes at a little distance from it. It is explained *not only by inaccessibility of certain parts of the larynx for our instruments*, but also by the imperfect performance of the operation. In most cases, however, the recurrence is due to the disease spreading to the lungs, and the insufficient power of resistance to the infection.

12. *Nearly the whole of the upper part of the larynx* is accessible to surgical treatment, by suitable instruments. It should be a rule in surgical treatment, to excise as much of the affected parts as possible, in one sitting. The double curette has the advantage over the single curette, in certain cases.

13. *It must be explained to the patients and their friends, before the operation, that the dysphagia cannot be removed at once, by surgical interference; that it is very often increased for a few days, and, further, that the operation does not effect a radical cure.* It is also advisable to tell the patients that the radical removal of the accessible parts is very seldom successful in one sitting; *that in spite of a successful operation, the disease in the larynx may return, and that the physician can give no guarantee of ultimate restoration to health.*

14. The conditions of success of the surgical treatment, in general, depend—

- (a) On the local character of the affection, its extension and its nature.
- (b) On the general state of the patient, his nutrition and his strength.

- (c) On the anatomical character of the affection of the lungs.
- (d) On the age of the patient, his constitution, his profession, his material circumstances, his temperament and his character.
- (e) On the thoroughness of the operation itself and the skill of the operator, as well as on the localization of the processes in such places where it is technically possible to perform a radical extirpation of the infected tissues.
- (f) On the careful after-treatment, and the capability of the patient to submit to a prolonged dietetic and climatic treatment.

15. In spite of the observation of all these points it is difficult to establish a prognosis ; it requires much experience, and in spite of that one cannot speak precisely in a great many cases.

It is an established fact that most patients affected with laryngeal phthisis die of pulmonary phthisis, it is also a fact that a large proportion of temporarily cured cases are threatened with recurrence ; but it can also be said positively that in rare instances there has been observed complete cure of the tubercular processes in the larynx, which lasted for years, and that indubitable anatomical proofs have made that fact a scientific axiom ; that further partial cures are in certain cases lasting ; that dysphagia, dysphonia, and sometimes dyspnœa, can be relieved by surgical operations, and that now we are not so helpless in meeting these dangerous affections as formerly.

16. Serious bleeding after the operation is very rare. It can be readily stopped by the application of a mixture of lactic acid and solution of iron perchloride in equal parts.

17. The want of success in treating cases of laryngeal phthisis by surgical or therapeutic means is often due to the disease being recognized too late for treatment to be of any use.

18. The surgical treatment demands on the part of the physician the greatest self-sacrifice, patience, great perseverance, thorough *knowledge of the operation*, and well-made sharp instruments. *The operation must be done in the patient's home, or in the hospital.* The after-treatment requires the greatest attention and the patient must be kept under observation for months and often years.

19. Bad cases of laryngeal phthisis ought to be treated in climatic establishments set apart specially for consumption. It would be desirable that the physicians in such establishments should acquire the art of operative treatment *so long as we are unable to exercise other means which will take the place of the surgical treatment necessary in many cases.*

20. The power of absorption in severe tubercular infiltrations, as also the likelihood of healing of even extensive ulcerous processes of the larynx, with complete restoration of the voice, has been proved to exist by anatomical and microscopical preparations as well as by long-continued clinical observation.

The Surgical Treatment of Laryngeal Tuberculosis—Abstract. By Dr. GLEITSMANN (New York).

There is no doubt that curettement of the larynx for this disease is

not yet frequent in the United States, either (1) on account of the surgeon wishing to avoid all harsh measures, or (2) on account of the acknowledged small percentage of cures.

I wish to urge the necessity for the proper selection of cases for this treatment, and the necessity that we obtain further reports of all treatments.

Other surgical proceedings.

Curettement of the larynx is not supposed to cure the pulmonary disease, nor to prevent relapses; but by it we improve the laryngeal lesion, and thereby increase the chances of cure of the pulmonary disease. It is certainly the quickest and surest way of curing dysphagia; the chief importance of removing this symptom is on account of the improvement in nutrition sure to follow.

The limitation of suitable cases is no reason against curettement, though relapses doubtless occur in proportion to the inaccessibility of the part and the difficulty of the operation.

I give the analysis of twelve cases treated by myself: 3, dead; 5, in *statu quo ante*; 4, no recurrence (for six to ten months).

He concluded with a reference to Dr. Chappell's creolin treatment.

BRITISH MEDICAL ASSOCIATION.

Annual Meeting, 1895.

SECTION OF LARYNGOLOGY.

Wednesday, July 31st.

Discussion upon the Etiology of Mucous Polypi of the Nose. By Prof. GUYE (Amsterdam).

The author discusses the theory of Woakes, that is, that mucous polypi are caused by necrosing ethmoiditis; the theory of Grünwald, that is, that polypi are secondary to empyema of the accessory cavities of the nose; and the criticism of Zuckerkandl upon these two theories to the effect that there is no sufficient pathological evidence in favour of either of them. The author's clinical experience is in accordance with Zuckerkandl's criticism, and he mentions a few cases which bring him to the conclusion that the mucous membrane of the nose has a peculiar predisposition to the production of mucous polypi as a reaction to noxious influences of very different nature. He considers that these noxious influences are, in rare cases, to be found in purulent disease of the maxillary or other sinus—in *ozæna*, rhinoliths, chronic catarrh, irregularities of the septum, etc., but that in the large majority of cases they remain undetected.

Dr. LUC (Paris): The author remarks that it is only since the publication of Ziem's work with regard to the detection of pus in the antrum of Highmore, that an etiological relationship has been acknowledged

between empyema of the antrum and nasal mucous polypi of the middle meatus, that region of the nose with which the pus comes more particularly in contact. He maintains that this relationship, if it is really frequent, is certainly not constant, and he cites many cases in which he himself has found no evidence of suppuration in the neighbourhood, and where the cheeks have been equally translucent on the two sides.

The author reviews the theory that necrosing ethmoiditis is a constant etiological agent in the production of mucous polypi, criticizes Dr. Woakes as passing over in silence the conditions under which such lesions develop, and expresses the suspicion that he may have artificially grouped under a common name lesions of different nature. Reports of microscopical examinations are quoted of cases of mucous polypi where no lesion of the underlying bone was to be found. The author concludes by stating the view that the mucous membrane of the middle meatus, in consequence of its peculiar structure, presents a special tendency to myxomatous degeneration; that this degeneration may be the consequence of a local irritation, such as is produced by continuous discharge of pus through the hiatus semilunaris, or by the presence in the neighbourhood of a neoplasm of another nature (frequent coexistence of a mucous polypi with cancerous growth); but also that this degeneration may take place without any appreciable provoking cause, and with all the appearance of spontaneity.

Dr. McBRIDE: 1. Defined the term nasal polypus—macroscopic and microscopic.

2. Discussed the similarity in microscopic character between mucous polypus and papilloma, and the usual seat of attachment of each.

3. Probably the characteristics of polypus result largely from purely physical causes, especially position. He also discussed inflammation as a cause.

4. The anterior region exhibits the most common points of attachment of multiple growths.

5. He discussed the macroscopic appearances of polypoid hypertrophy.

6. Besides physical laws and inflammation, other causes must be sought to account for certain cases—probably some peculiarity of the mucosa.

7. He reviewed diseases of the osseous parts as a cause; the accessory cavities; the views of Woakes and Grünwald, and coryza caseosa.

8. He gave statistics based on 114 hospital and 89 private cases.

		Males.		Females.		Age most cases.
Hospital	...	63	...	51	...	20—30 years.
Private	...	43	...	46	...	60—70 „

Thursday, August 1st.

The Infectious Nature of Lacunar Tonsillitis. By Prof. B. FRAENKEL (Berlin).

The author describes the clinical phenomena of lacunar tonsillitis, which are clearly those of an infective fever. Microscopic examination of affected tonsils reveals the signs of inflammation of the parenchyma,

with increased transudation of leucocytes, and the presence of micro-organisms in the tissues.

Only quite undoubtedly simple cases are of service in the study of the etiology. Such cases do occur as sequelæ of intra-nasal operations. In these we cannot doubt but that micro-organisms are carried by the lymph vessels to the tonsils, access being gained by way of the intra-nasal lesion.

The presence of micro-organisms is an essential factor in the causation of the disease, but these can penetrate and become actively pathogenic only when some influence detrimental to the organism is also present. Chill possibly may act as a factor by causing rhinitis, and so opening the door to micro-organisms which are normally excluded.

Dr. MACINTYRE (Glasgow) discussed the *Etiology*.

I. *Bacteriology*.—(a) He reviewed the micro-organisms found during the course of the affection, and their causal relationship.

(b) The micro-organisms found in those predisposed, and in apparently healthy subjects.

(c) The conditions favourable to the development of these.

(d) The products of organic life and results of their introduction into the system.

II. *Clinical Evidence of the Introduction of Pathogenic Organisms*.—

(a) The nature of the lesions produced locally.

(b) The nature of the lesions produced at a distance.

III. *The Practical Application of the above Theories*.—(a) The classification of such affections.

(b) The differential diagnosis.

(c) The principles of treatment.

(a) Prophylaxis.

(β) During the course of the affection.

Friday, August 2nd.

The Indications for Early Radical Operation in Malignant Disease of the Larynx. By Dr. BRYSON DELAVAN (New York).

I. He discussed the considerations of variety, location, and stage of growth, and of personal characteristics of patient.

II. Early recognition of the growth :

(a) The necessity for improved methods of diagnosis.

(b) For more widely distributed knowledge of diagnosis.

III. The perfecting of operative procedures :

(b) Improvement in management after operation.

IV. Assured skill and experience on the part of operators :

V. Elimination of possibility of treatment by other methods :

(a) Endo-laryngeal applications.

(b) Endo-laryngeal operations.

(c) Constitutional treatment.

(d) Serum-therapy.

In general, the indications for the early treatment of malignant disease of the larynx are the prompt recognition of a malignant neoplasm of a given type impossible of treatment by other methods, situated favourably for radical extirpation in a suitable patient, and operated on by one absolutely qualified for the successful accomplishment of such work.

Mr. BUTLIN : The author makes two propositions :

1. Every malignant growth of the larynx of intrinsic origin, which can be dealt with, should be treated by a radical operation, in the absence of a decided indication to the contrary ; and the operation should be performed with the least possible delay.

2. Every tumour of the larynx, suspected to be malignant, of intrinsic origin, of limited extent, and apparently within reach of free removal, justifies an exploratory thyrotomy in a suitable patient, in the absence of evidence of infiltration of the surrounding structures, and of affection of the lymphatic glands.

The author endeavours to prove the justice of these propositions by showing that radical operations have been sufficiently successful, and that exploratory thyrotomy is not attended with excessive dangers.

The best cases for operation.

The after-treatment of operation cases.

By the courtesy of the editor of "The British Medical Journal," the papers presented in this Section, and in that of Otology, will subsequently be published in this Journal. The above is merely a *résumé* of the papers presented for the opening of the discussions.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

*Seventeenth Annual Congress, held at Rochester, N. Y.,
June 17th, 18th, and 19th, 1895.*

President—Dr. JOHN O. ROE, Rochester.

Secretary—Dr. CHARLES H. KNIGHT, New York.

[*Scientific Proceedings reported for the JOURNAL OF LARYNGOLOGY, by Dr. JAMES E. NEWCOMB, New York, Fellow of the Association.*]

First Day—Monday, June 17th.

THE PRESIDENTIAL ADDRESS.

THE President welcomed the members of the Association to the seventeenth annual congress of the society, and also extended to them the hospitality of the city of Rochester, it being the first time the Association had met in that city.

He briefly reviewed the good work done by its members during the past year, and called attention to the able and comprehensive retrospect of the achievements of the society since its organization which was given

by the President last year. He also spoke of the great advantage derived by the members from association in organized and specialized medical bodies as illustrated by the achievements of the society, and of the importance of a permanent enthusiasm and punctual attendance of each and every member.

He then took for his subject, *The Relation of Damp Air to Diseases of the Air Passages, and the Relative Prevalence of these Diseases in the Region of the Great Lakes*. In discussing this subject he first called attention to the importance of distinguishing between humidity and dampness, and to the relation between the amount of moisture that the air will sustain and the temperature of the air, and that air becomes damp only as it approaches the dew point. An atmosphere may be very humid, and contain a large amount of moisture, and still be far from being damp if the temperature is uniformly warm; whereas in a lower temperature the air may contain a very much less amount of moisture and at the same time be very damp. This is because the air approaches or reaches the degree of saturation.

He pointed out the relation of damp air to diseases of the air passages, and showed that exposure to a damp atmosphere is one of the most potent causes of catarrhal affections of the nose, throat and lungs. A warm humid atmosphere may in some cases be decidedly beneficial in these affections, while a damp atmosphere is very detrimental. A cold atmosphere must necessarily be a very dry one in order to be salutary to diseases of the respiratory organs.

He also noted the relation of damp air to phthisis, as first pointed out by Prof. Bowditch, and the catarrhal conditions of the air passages caused thereby which renders them an excellent feeding-ground for the bacillus, and the person proportionately susceptible to tuberculous infection. He spoke of the pernicious habit indulged in by many people of sleeping with their windows so widely open as to allow the cold, damp air to enter directly into their sleeping apartments without having been first rendered warm and thereby fit for respiration, and showed that the damp night air becomes specially detrimental when the temperature is below 65° Fahrenheit.

He then called attention to the excessive humidity and dampness of the region of the Great Lakes, due to the chilling of the atmosphere by the cold waters of these lakes, which are largely derived from the regions of the north. As this cool water passes down through the lakes it cools the surrounding atmosphere, condenses its moisture, thereby increasing the cloudiness of this region and the dampness of the atmosphere, by lowering the mean temperature, especially during the spring months. And it is on account of these influences that diseases of the nose, throat and lungs are more prevalent in this region than they are in regions removed from such influences.

Desiccated Thyroids in Goitre. Paper by Dr. E. FLETCHER INGALS (Chicago.)

During fifteen years, the writer has seen 81 cases of bronchocele and exophthalmic goitre. He has been accustomed to treat them with

the iodide, tincture of iodine, and injections of carbolic acid, in glycerine. For the past three or four years he has used the thyroid products, and in his last 6 cases the desiccated thyroids prepared by Armour & Co., of Chicago. Of this preparation, 6 grains represent one entire gland. Abstracts of the clinical histories of these 6 cases were then given. He has collated the results of 44 other cases in the practice of other physicians. In one series of 25, all but 7 were improved by the desiccated gland, though headache was noted in 30 per cent.; dizziness in 37 per cent., and increased rapidity of the heart in 25 per cent. Out of the whole 50, the size of the neck was reduced in 38. Out of 7 cases of myxœdema, 5 were benefited, though the change in bodily weight was practically nothing, some gaining and others losing.

Of disagreeable symptoms, headache was noted in 18 per cent.; dizziness in 20 per cent.; trembling in 14 per cent.; increase of pulse rate in 11 per cent.; weakness, 17 per cent.; nausea, 7 per cent.; loss of weight in 25 per cent., and in one case, strong uterine contractions. He would conclude as follows:—

1. Thyroid products exert a strong physiological action upon the nervous and circulatory systems.

2. These systems result from a daily equivalent of from $1\frac{1}{2}$ to 2 glands.

3. Internal administration does as well as the hypodermatic method.

4. The daily dosage of the desiccated product should begin with gr. ij., t. i. d., and gradually be increased up to gr. viij., t. i. d.

5. The effect on bodily weight is uncertain, varying in the same individual from time to time.

6. Some of the disagreeable effects noticed may be due to incidental gastric disturbance.

7. The products are serviceable in myxœdema.

8. The size of the enlarged gland is reduced, except the cystic forms of enlargement, which do not seem affected.

9. Outside of the above-named conditions there is no evidence that the thyroid therapy has any place in medicine.

The discussion was opened by Dr. E. L. SHURLY (Detroit). He had used the remedy in some 15 or 20 cases, but with disappointing results. He narrated the case of a boy fifteen years old, from whom the thyroid was extirpated. After the operation he developed somewhat, but did not seem to grow. Three or four years later, he was apathetic, and had a thin piping voice. Examination showed a normal movement of the arytenoid and the cords, but the latter were deficient in tension. Feeding for two years on thyroid extract improved the laryngeal and mental conditions. In view of the disastrous results which follow the entire extirpation, he thought that laryngologists should protest against entire removal by the surgeon. If only a small portion of the gland was left, these untoward results did not follow.

Dr. W. E. CASSELBERRY (Chicago) had used thyroid extract in one case of exophthalmic goitre with improvement, but not cure. He narrated the experience of Paul Bruns, of Tübingen, who had found that good results depended very largely on the age of the patient. In the cases

under ten years, all were cured; in those from ten to twenty, three-quarters were cured, while in those from forty to sixty, very few were cured. Béchere had shown that it was possible to produce a fatal result in monkeys in ten days, by feeding them with the extract. Sudden death had resulted from heart failure.

The Influence of Chronic Affections of the Throat upon certain Defects of Speech. By Dr. BRYSON DELAVAN (New York). Read by title.

The influence of adenoid and tonsillar obstruction upon the pronunciation of certain consonant sounds is well known, as is the effect upon pronunciation of the relaxation of the soft palate, due to the above causes and to catarrhal conditions of the throat in general. The number of consonants thereby mispronounced is greater than is supposed, and several such mispronunciations which may persist through life apparently owe their origin to this cause.

Particular attention, however, is called to the effect of the above throat conditions upon *stammering*. While stammering may be due to other than peripheral causes, and while many thus affected have perfectly normal throats, it is a well-known fact that speech is more difficult with them when from hunger, fatigue or illness the pharynx and soft palate are relaxed. Where relaxation is habitual, the vocal defect is likely to be exaggerated in consequence. Not only is this statement true by analogy, but practical experience also proves it. Stammerers suffering from irritation and relaxation of the throat have been greatly benefited by the cure of their throat affections, as the writer has had occasion to observe in many instances, and while the vocal defect may not always have been eradicated, the improvement has been marked.

In view of this, it is urged that chronic affections of the throat in stammerers be relieved if possible before the patient is placed in the hands of the vocal instructor. The work of the latter will be greatly facilitated, and the results much improved if the above suggestion be carried out.

Electrolysis by a Current Controller for the Reduction of Spurs of the Nasal Septum. Dr. W. E. CASSELBERRY read a paper with this title.

The author disclaims any idea of indorsing electrolysis as a universal substitute for the surgical method, but has sought to determine the scope, or better stated, the exact limitations of the process by electrolysis. A *résumé* of the previous literature is given, and then follows a description of the McIntosh current-controller which in connection with the Edison electric light circuit he has adapted to this use, as a substitute for the primary galvanic battery heretofore employed. The controller together with a milliampère metre, cords and needles, is contained in a small drawer within easy reach as the operator sits in position for the treatment of patients, and is always ready for immediate use without waste or corrosion. By means of it, electrolysis is as easily and readily applied as the galvano-cautery, except for the few minutes additional time that its energy needs to accomplish the work.

The current strength necessary for electrolysis of nasal spurs is from

15 to 40 milliampères measured with the resistance of the spur in the circuit, and to supply this current from 15 to 30 cells of a galvanic battery would ordinarily be used with a corresponding electro-motor force of from 12 to 20 volts or more. The Chicago Edison current has an electro-motor force of 110 volts, which must be reduced by the current-controller, aided by one 16-candle power lamp ("in series") in the circuit. The ampèreage can be correspondingly reduced so that with the spur in the circuit it measures the requisite number of milliampères.

The controller is composed of a number of resistance coils of varying size, with sliding contacts arranged in two rows; the decimal slide, by means of which the electro-motor force can be divided into tenths, and the centesimal slide which divides the electro-motor force into hundredths, so arranged that the patient may be placed in a "shunt" to one or more coils of either grade.

Thus, for instance, in treating Case I., with one lamp in the circuit, which in itself affords sufficient resistance to reduce the original 110 volts to 55 volts, as an initial current with which the controller has to start, the needles were first inserted into the cartilaginous spur. Then the decimal slide was pushed to 1 which represents the removal of sufficient coil resistance to give 1 of 55 volts, then to 2 which gave $\frac{2}{10}$ of 55 volts, or 11 volts, at which time the metre registered 40 milliampères, which was adequate, maintained for eight minutes, to accomplish the purpose. In this case the sitting was repeated once to reduce another section of the spur. In other cases, having secured a current of 11 volts in this manner it was gradually increased to 13 or 14 volts, by the use of the centesimal slide, each joint of which would add $\frac{1}{100}$ of 55 volts or about $\frac{1}{2}$ volt. The metre in different cases, with 11 to 14 volts, would register from 15 to 50 milliampères, according to the amount of resistance of the spur.

The controller is constructed and tested with a view to safety. The bipolar method was used exclusively and needles of irido-platinum preferred. A very sharp point can be given this substance and its penetrating power is almost equal to steel. Not being oxidizable, irido-platinum needles can be used repeatedly, and, hence, can be permanently soldered to metallic conductors, running through a light handle which constitutes the needle-holder.

The author has devised such an instrument which meets all requirements. Steel being oxidizable requires changing of needles for every treatment, with annoyance incidental to adjustment in the holder. Even steel will not penetrate bone and irido-platinum will easily penetrate cartilage.

Ten cases are reported which for the sake of brevity and to enable one to draw definite conclusions therefrom are classed in three types, according to the composition and location of the spur.

Type I., *Strictly Cartilaginous Spurs*, includes five cases successfully treated. Much care is necessary not to produce a perforation. One to three sittings are required. The pain is but slight, but an occasional disposition to faint is observed. A duration of six to eight minutes is sufficient.

Type II., *Mixed Cartilaginous and Bony Spurs*, includes three cases

in which the spur was reduced in size only, the amount of reduction being commensurate with the proportion of cartilage contained in the spur. The bony parts cannot be penetrated by the needles, and are but little affected by the electrolytic process.

Type III., *Bony Spurs*, includes two unsuccessful cases.

Conclusions.—As demonstrated by the cases reported under Type I., strictly cartilaginous spurs can be thoroughly removed by electrolysis, one, two, or at most three operative sittings being required. It is more tedious and less brilliant than the surgical method, but is not accompanied by any liability to immediate hæmorrhage, and by only a remote possibility of secondary hæmorrhage.

It is not to be endorsed as a universal substitute for the surgical method in even this limited class; but the number of individual cases both in this type and in Type II. for which it is applicable is many, and with the efficiency, convenience and compactness of the McIntosh current controller, which adapts the Edison electric light circuit to its use, together with properly constructed irido-platinum needles, it is considered a valuable addition to our resources.

As demonstrated by the cases reported under Type II., it will not thoroughly remove spurs which belong to that large class of mixed cartilaginous and bony substance; but it will reduce them in size, the amount of reduction being commensurate with the proportion of cartilage of which they are composed. The majority of such cases would therefore be better treated surgically, as being the more thorough method; but instances will arise in which the surgical method being declined, or being for some reason inexpedient, benefit may accrue from the use of electrolysis.

As demonstrated by the cases reported under Type III., spurs composed wholly or largely of hard bone cannot be successfully treated by electrolysis for the reason that needles cannot be caused to penetrate properly, and, further, it is doubtful if the process be adequate, even if the needles should penetrate, to the resolution of hard and dense bone.

Spurs or excrescences and not deviation of the septum is the subject of this paper. Electrolysis is powerless to correct deviated septa of any form.

In discussing this paper, Dr. J. E. NEWCOMB (New York) related his personal experience in two cases. He was not able to accept the statements of those Continental observers who claimed that electrolysis would destroy bony growths.

Dr. W. H. DALY (Pittsburg) had used electrolysis, but discarded it in favour of the surgical method. Electrolysis is a waste of time, as it is more of a theory than a fact, for what we really accomplish is the result of a cauterizing process. He prefers the trephine driven by the De Vilbiss motor. The current controller devised by the reader of the paper could not be used with the alternating current, which is the one most generally employed for commercial purposes.

Dr. SHURLY thought electrolysis in nasal spurs analogous to trying to amputate a thigh by lunar caustic.

Dr. JONATHAN WRIGHT (Brooklyn) thought that the method was an

admirable one in cases of phthisis and other conditions of debility where one wished to avoid shock and loss of blood. Such patients are in a delicate condition, and it is easy to start them downhill.

Dr. INGALS thought it possible to remove soft spurs with the galvanocautery, especially if we used a fine point heated to whiteness.

Dr. J. H. LOWMAN (Cleveland) had heard the discussion on this topic at the last international medical congress, and had inferred that the weight of opinion among conservative rhinologists was against the method.

Dr. S. HARTWELL CHAPMAN (New Haven) thought Dr. Casselberry's apparatus defective in that it did not subdivide the current sufficiently to prevent shocks and faintness.

Dr. J. W. FARLOW (Boston) thought the avoidance of hæmorrhage a great point in favour of electrolysis. He has seen severe hæmorrhage follow the use of the saw even in non-bleeders.

Dr. DALY preferred to check nasal bleeding in these and similar conditions by means of padded intra-nasal splints made of aluminium.

Dr. CASSELBERRY said, in closing the discussion, that severe inflammatory reaction was apt to follow the use of the cautery on the septum. Dr. Chapman's objection was a valid one, and he hoped to be able to remedy this defect in the current controller.

After the reading of papers at the opening session, presentation of instruments was in order. Dr. J. W. GLEITSMANN (New York) exhibited a *Conchotome* devised by him for removal of portions of the middle turbinate. Dr. J. W. FARLOW (Boston) exhibited a *Portrait of Ferdinand I. of Germany*, who is supposed to have had adenoids. Dr. M. J. ASCH (New York) showed a *Modification of Gradle's Post-Nasal Forceps*, also a *Dilating Intubation Apparatus* and a *Mouth-Gag*. Dr. A. COOLIDGE, junior (Boston), showed a *Dilator* for use in syphilitic adhesions of the soft palate to the posterior pharyngeal wall. Dr. J. C. MULHALL (St. Louis) presented a *Current Controller* for use with the alternating current.

Is Acute Tonsillitis in any way dependent on the Rheumatic Diathesis?

Paper by Dr. GEORGE B. HOPE (New York). Read by title.

The paper takes the ground that the theory of acute tonsillitis, very generally attributed to an underlying rheumatic or gouty diathesis is, in the writer's experience, not substantiated by clinical observation, and believes that the accepted version is largely due to the natural disposition to fall into line with time-honoured views and unconsidered general statements.

The issue is made that patients subject to attacks of tonsillitis do not commonly afford a history of rheumatism proximate or remote, while, on the other hand, the rheumatic individual rarely suffers from inflammation of the tonsil; that it is noteworthy that the tonsil in later life becomes less and less disposed to acute attacks, while the rheumatic age is more confirmed. Furthermore, as a local acute manifestation, rheumatism should select a sero-fibrous rather than a muco-fibrous or lymphatic structure as the tonsil. Carrying the argument further, it is claimed that

suppurative peritonsillitis is clearly of an infectious nature, and is frequently a sequela of intra-nasal operations quite independent of climatic or constitutional conditions.

The conclusion reached from the above is that the favourite anti-rheumatic remedies, as guaiac or the salicylates, as addressed to the causation are either erroneous in practice or act independently, and by methods not clearly stated; such remedies should not be considered specifics, but should be adjusted to the varying conditions of the subject. Moreover, it is not proven that the treatment does abort or mitigate the course of the disease.

Second Day, Tuesday, June 18th.

Cases of Lipoma. By Dr. FARLOW.

Case I.: *Lipoma of the inside of the Cheek.* Patient, a boy aged two, previously well; mother noted blood in his mouth, and the next day consulted Dr. Farlow. On the inner side of the cheek was a reddish, lobulated, pediculated mass, soft and freely movable; not ulcerated. Removed without bleeding by cold snare.

Case II.: *Lipoma of the Larynx.* Patient, male, aged sixty-six, in good health. Seven years before a tumour was felt projecting from the throat up into the mouth, and a piece two inches long was removed by scissors. Case first seen by Dr. Farlow in March, 1893. The mass had again grown, and the patient was obliged to wrap a piece of cloth about it and hold it to one side, so as to prevent injury by the teeth, as it was apt to project beyond the lips. He experienced suffocative attacks from the falling backward of the mass down between the cords into the trachea. A portion was removed with curved scissors and the cold wire snare, but patient did not return for completion of the operation. Later, came back with recurrence of the growth and return of old symptoms. In December, 1894, three pieces were removed with the hot snare, and the throat completely cleared. Attachment was seen to have been just in front of arytenoid cartilage. Microscopical diagnosis of both cases: "sub-mucous polypoid lipoma."

Some Remarks on Removal of the Tonsils. Paper by Dr. FARLOW.

The writer confined his remarks entirely to the choice of operative methods. We must first break up all adhesions to the faucial pillars. In cases of large projecting tonsils with associated adenoids, he gives an anæsthetic, first removes the tonsils, and then the adenoids. His favourite instrument for the former is a specially devised écraseur, with the usual No. 5 steel wire. The instrument is based on the model of Hooper's snare, but the canula is straightened, and weak points reinforced. Operation would be easy if large tonsils were always found in large mouths, but, unfortunately, they frequently exist in children with small mouths and narrow jaws. The tonsil must be thrown out of its bed by external pressure, and then encircled by the wire, which can be tightened as slowly or as rapidly as desired. After operation, ice is freely used. Cocaine may be employed where the tonsils alone (no adenoids) are to

be removed. Sections of extirpated organs have shown that the *écraseur* cleans out all the tonsillar tissue down to and even including the sheath. Dr. Farlow has also used the Ruault tonsil-punch, and Hartmann's conchotome, for the deeper masses high up between the faucial pillars. He employs small curved knives to break up the surface of the organs, so as to afford a hold for the punch forceps. The galvano-cautery he regards as too tedious.

Dr. F. H. BOSWORTH (New York) regarded the tonsil as merely diseased tissue, and whenever he cut into lymphoid tissue he expected more or less bleeding. Severe hæmorrhage was rare in children. The large rounded masses could be easily sliced off with the guillotine. In the diffuse cases, with adhesions to the faucial pillars, we must dig the tissue out. No one instrument would answer for every case.

Dr. INGALS thought that bleeding often resulted from small tonsils, whose removal is indicated, though they may not be large at the time of operation. Cocaine has very little effect on the tonsils, and bleeding is more liable to occur after its use.

Dr. CARL SEILER (Philadelphia) thought that the longer diameter of the tonsils was horizontal rather than vertical, and that most of the instrument makers overlooked this fact.

Dr. DALY thought that more bad surgery had been done on the tonsils than on any other part of the body. Mackenzie's tonsillotome only half completes the operation, and its use must be followed by that of the knife and forceps, in order to do the necessary trimming. He had had four or five cases of alarming hæmorrhage.

Dr. CASSELBERRY thought that children sometimes bled, and he never operated without having at hand a reliable galvano-cautery to serve as a hæmostatic in case of need. In regard to separation of adhesions, he was careful to isolate the muscular structure of the pillars, and if he could do this, he did not mind sacrificing a little mucuous membrane.

Dr. SHURLY thought that in every instance we should be careful to estimate the nature of the tonsil we had to deal with, and the amount of tissue which ought to be removed. Bleeding may come from an abnormal distribution of arterial twigs. In ignipuncture he did not follow the crypts, but burned diagonally across them, making two or three punctures at each sitting, and endeavouring to set up an acute inflammation in place of an old proliferating one. He would differ from Dr. Seiler as to the direction of the long diameter of the tonsil.

Melancholia cured by Intra-Nasal Operation. Paper by Dr. BOSWORTH.

His patient, a business man, aged forty-two, was seen in April, 1891. In 1876 he had suffered from influenza, and afterwards from hay fever, which came on in August of each year. In 1881 he began to suffer from depression, insomnia and melancholia—at first periodically, but later constantly, gradually becoming unfitted for business. His eye-balls felt too large for their sockets, and he complained of a twisting feeling between the eyes at the root of the nose. He fell into the hands of various physicians, who at different times operated for varicocele, stricture and hæmorrhoids, castrated him, prescribed glasses, cut the

tendons of the eye muscles, enucleated one eye, ligated the internal pudic artery, cauterized his spine, put a seton in his neck, and circumcised him. He did not improve, and became so despondent as to contemplate suicide. Examination of the nose revealed a complete occlusion of the right side by a bulging of the cartilaginous septum and a myxomatous degeneration of the left middle turbinate, with evidences of ethmoid disease. The nostrils were freed by saw and snare with great and immediate relief to the aprosexia and gradual improvement of the psychical symptoms and hay fever. He finally became fully restored to health, and was now attending to business.

Ethmoid and Sphenoid Disease; Brain Abscess and Death.

Dr. BOSWORTH also reported the case of a dentist, aged thirty-three, who had complained for some time of an offensive purulent discharge from the left nostril, and later from the right. When first seen he had had for four days headache, neuralgia of the left side of the face and head, but no fever, and he was in good general condition. Pus was seen running down between the left turbinate and the septum. Penetration with a sharp gouge into the ethmoid region gave notable relief for about a week, but he again became worse. With a three-sixteenths of an inch burr an effort was made to enter the sphenoidal sinus, but it was not possible to determine whether the chamber was actually penetrated or not. The next day there was a chill temperature of 106°, semi-coma, paralysis of the left arm and face, a second rigor, and death in twenty-four hours after the initial chill. No autopsy was held. The old symptoms were thought to be due to the ethmoid disease; the headache, etc., to involvement of the sphenoid, and the final symptoms to brain abscess lasting about twenty-four hours. The case suggested to the writer—first, that ethmoid disease, while not primarily dangerous, might secondarily become so by leading to involvement of the sphenoid, and, secondly, that true primary disease of the latter cavity is very rare. He had only seen two undoubted cases of the latter, but one hundred and fifty of ethmoid trouble.

Further Contribution to the Study of Suppurative Disease of the Accessory Sinuses, with the Report of Cases. Paper by Dr. J. H. BRYAN, Washington, D.C.

Case I. *Abscess of the Right Maxillary Sinus resulting from Dental Caries.* Male, aged thirty-nine. Nasal discharge for several years, with neuralgia and some loss of general health. Examination showed tenderness on pressure over the right canine fossa, and slight hypertrophy of the inferior turbinates. No discharge noticed *in situ*, but on blowing the nose there was a slight escape of foul-smelling pus from the right nostril. The upper first and second (right) molar teeth were carious. These were removed by a dentist, who found projecting from the root of the first molar a piece of a needle, one-eighth of an inch long, which had penetrated the floor of the antrum. Patient remembered that, eight years before, he had picked his tooth with a needle, which had broken off, but, as he had no subsequent pain, he had forgotten all about it.

Treatment : Irrigation by hydrogen dioxide and salinated solution of boric acid. Cure in three weeks. Relief to all general constitutional symptoms.

Case II. *Suppurative Ethmoiditis terminating in Caries of the Anterior Ethmoidal Cells.* Male, aged sixty-eight. For past ten years has had neuralgia at the inner angle of the left orbit, radiating over the same side of the face and head ; was always increased by an acute head cold ; discharge from the left nostril for some years of yellowish pus ; no orbital swelling or visual disturbance. The left middle turbinate was slightly enlarged, and pus escaped from beneath it. Probe detected anterior ethmoidal caries. Treatment : Ethmoidal cells opened by sharp curette. Relief to all neuralgic and orbital symptoms, and cessation of discharge.

Case III. *Abscess of the Left Frontal Sinus, resulting from Nasal Polypi and Hypertrophic Rhinitis.*—Male, aged fifty ; left nasal discharge for some years. Intense pain in left forehead, left nasal obstruction, and general impairment of health. A severe attack of influenza greatly increased his painful symptoms. Marked mental depression ; secretion profuse and muco-purulent in character. Supra-orbital ridges were very prominent, and skin over left sinus was red and swollen, the blush running down on the eyelid. Left nostril blocked by polypus springing from middle turbinate, with marked hypertrophy of inferior turbinate, which was adherent to a long spine extending out from the nasal septum. Treatment : Removal of polypi and bony spine, with reduction of middle turbinate. Free drainage was thus established. The fronto-nasal duct was unusually large. Rapid relief of all symptoms. There is still (ten weeks) a slight mucous secretion from the sinus, which is decreasing. Case is still under observation.

Case IV. *Abscess of the Frontal, Ethmoidal and Maxillary Sinuses, with Caries of the Fronto-Ethmoidal Cells.* Female, aged forty-eight ; frequent catarrhs of the upper respiratory tract for the past twenty years, with thick yellowish discharge from the left nostril for the past seven months. No pain in teeth, which were absolutely sound ; occasional headache, giving way to painful sensations over whole left face ; teeth of that side seemed to project further than those of the opposite side. Pain was especially severe over the supra-orbital ridge, with slight swelling of this, and the infra-orbital region ; with tenderness in the former situation and over the canine fossa. There was slight turgescence of the right inferior turbinate, and deep swelling of the inferior and middle left turbinates. The nose was full of pus, which discharged freely anteriorly, and, in the reclining posture, posteriorly. Transillumination showed opacities of left frontal and maxillary sinuses, and the usual field for red and green was somewhat narrowed. Treatment : Extraction of the first molar tooth, trephining through the alveolar process, and the escape of pus. Irrigation as in previous cases. In two weeks pus ceased to form in this cavity, but it was still seen in the middle meatus, and the severe headaches continued.

After awhile the frontal sinus was opened under ether, and thoroughly explored with a probe ; but no dead bone was found. The sinus was

irrigated, and a drainage tube inserted. In the course of a month, the pus flow had nearly ceased, and the patient was about to be discharged, when pus again appeared in the nose and through the fistulous opening in the forehead, with a return of all the painful symptoms. The sinus was reopened, granulations scraped away, and the opening enlarged. After irrigation with a 1-6000 bichloride solution, the cavity was packed with iodoform gauze. All measures seemed inefficient to check pus formation, and during one irrigation it was discovered that fluid injected into the antrum (where pus had reappeared) came out through the frontal opening, showing that there was a direct connection between the two cavities. Later, diseased bone was detected about the anterior ethmoid cells, and with the electric burr free drainage was established. Patient gradually recovered, having been under treatment for ten months.

Dr. BRYAN then discussed the general symptomatology of this class of cases, and laid down the general surgical rules which should govern their treatment.

Dr. WRIGHT related the history of a case of obstinate antrum disease, in which several operations had been performed, and in which it was extremely difficult to determine the exact source of the pus as the antral mucosa had seemed healthy. He would advise against early operation, as the cases sometimes subsided spontaneously.

Dr. INGALS had seen three cases of sphenoidal disease. He thought the best method to attack the sinus was from below rather than anteriorly. This he did by means of an instrument used by the dentists, in which the drill revolves at right angles to the axis of the shafting.

Dr. GLEITSMANN preferred to open from the front, using the Schaffer probe, passed in the classical direction. He had seen in one case profuse secondary hæmorrhage, requiring anterior and posterior plugging.

Dr. SHURLY had seen many cases of nasal discharge, which he referred to as neuritis due to organic disease of the olfactory bulbs. He had not regarded them as of ethmoidal origin.

Dr. DALY advocated severing the attachments of the nose on one side, and laying it over on the cheek, as being the safest and easiest way to reach the sphenoidal cells.

Dr. MULHALL thought the cranial cavity with its brain contents much better protected, naturally, in the sphenoidal than in the ethmoid region. He would again call attention to the valuable teachings of Grünwald's monograph on this topic. Sphenoid disease, apart from ethmoid, he believed to be very rare.

A Consideration of some of the more important Principles of Intra-Nasal Surgery. Paper by Dr. W. K. SIMPSON (New York).

The more we can apply surgical principles to the treatment of morbid nasal conditions the greater will be our success. Conservative surgery may be defined as the art of knowing when not to interfere. Intra-nasal surgery has been carried too far, and the pendulum is now on the return swing. It was inevitable but that we should make some mistakes, but these ought to serve as landmarks to guide us against further errors.

Dr. Simpson desired to dwell especially upon the treatment of ob-

structive and hypertrophic rhinitis. In all these conditions there was a pre-surgical or pre-operative period, during which we should do as much as possible by regulation of clothing, diet, and general environment. In mixed conditions, with a tendency to atrophy, we should be careful not to do too much, else we may inaugurate a worse state of affairs than the one we wish to relieve. Moreover, we must remember that in nasal architecture we rarely encounter perfect symmetry with a smooth nasal interior. In deciding to operate we should choose that method with the least shock and hæmorrhage, leaving a smooth, hard surface, with the least possible destruction of the mucosa, leaving the greatest amount of normal secreting surface, and attended with the least possible danger of infection.

In the case of the operation wound rigid antisepsis should be aimed at. Nasal surgeons are apt to get careless in their minor work. The thumb and forefinger, with which cotton is wound on applicators, should be kept scrupulously clean. The nose is not a closed cavity, and hence perfect asepsis is impossible, but we should approximate thereto. Much of the "grippe," "heavy cold," etc., after operative work is in reality a mild sepsis.

Dr. Mulhall believed that sepsis would never follow galvano-cautery if the tip was heated white and not allowed to cool *in situ*. The slight hyperæmia of the mucosa caused by the radiant heat was quickly dissipated by the use of a salinated solution of sodium bicarbonate.

Ludwig's Angina. Paper by Dr. J. E. NEWCOMB (New York).

The author traced the history of the affection from its first appearance in medical literature. The name itself is objectionable on the general principle of nomenclature in disease, and, moreover, it is probable that the malady was noted by Heim some thirteen years before Ludwig. Modern writers define it as a diffuse phlegmonous inflammation of the floor of the mouth, and of the inter-muscular and subcutaneous cellular tissue of the sub-maxillary region, which may resolve or end in abscess or gangrene. Many writers confine the site of its occurrence to the submaxillary region, but this is not in accord with the earlier view. Moreover, it is evident that different men have had different things in mind when writing under the same title.

It has always been a moot question whether the morbid process is or is not deserving of a special name and consideration as a special process. Ludwig gave as the characteristic local features—(1) a peculiar wooden-like induration of the connective tissue which will not receive impressions; (2) a uniform spread of this induration in such a way that it was always bordered by a zone of entirely unaffected cellular tissue; (3) a hard sublingual swelling with a bolster-like mass around the interior of the lower jaw of a deep red or bluish-red colour.

While it is impossible to harmonize the various contradictory statements made it would seem that the disease should be regarded as an intensely infectious phlegmon, occurring under peculiar anatomical conditions. It is, in fact, one form of septic sore throat with, in the majority of cases, a very uncertain etiology. Actinomycosis has been suggested as a causative factor, but not proven. The ordinary suppura-

tion germs have been found. Fatal cases show a uniform disintegration of cervical cellular tissue and muscular substance, large sloughs mixed with an ichorous fluid or offensive pus, which may burrow down along the cellular planes to the sternum, mediastinum, or even pericardium.

Predisposing causes favouring the entrance of virulent germs are dental caries, eruption and avulsion, diseases of the buccal glands, herpetic ulcerations on the lips and tonsillitis. Cold as an exciting factor signifies little, for we now know that "colds" are frequently the result of some infection whose nature and mode of access to the tissues cannot always be made out.

In the true Ludwig's angina the pus originates in the sublingual hollow of Sebileau—*i.e.*, the triangular pyramidal space, the apex of which, situated below, corresponds to the point where the mylo-hyoid muscle borders the genio-glossus, and the base of which (situated above) stretches along under the tongue. Its external (oblique) wall is formed by the internal face of the inferior maxilla and the mylo-hyoid muscle; the internal (vertical) by the genio-glossus and the hyo-glossus. After the sublingual gland becomes first affected, and the submaxillary later. The microbes determining the sublingual phlegmasia may penetrate the submaxillary sheath, or the sublingual pus may dissociate the fibres of the mylo-hyoid muscle, and thus invade the submaxillary region.

The local symptoms are those of a phlegmon exerting pressure, and the constitutional correspond, assuming either a sthenic or asthenic type. Special importance is attached to the presence at the inner aspect of the dental arcade of a pad or button-like area of hardness. Conditions requiring to be differentiated from angina Ludovici are simple submaxillary adeno-phlegmon, osteo-myelitis of the jaw, and the (rare) hygroma of Fleischman.

Under the title of angina Ludovici only about 100 cases have been found, and in only 58 of these are the particulars given; 44 were males, 9 females, and 5 infants (sex not stated); maximum age sixty-six years—minimum, three months; 40 per cent. occurred between the ages of twenty and thirty years. Of the 58, recovery is noted in 33, and death in 25. Bacteriological examination in 9 showed the presence of streptococcus pyogenes (4), staphylococcus pyogenes aureus (1), albus (1), and erysipelas cocci (2); in one instance there was found a bacillus a little longer and narrower than the bacillus coli communis, but clearly distinguishable from the latter by culture reaction.

Our modern conceptions of infections enable us to sum up treatment as early incision, subsequent rigid antisepsis, and a general supportive treatment.

Dr. Newcomb, in conclusion, referred to the recent contribution to the subject by Semon, of London, who has advanced the proposition that angina Ludovici, along with phlegmonous pharyngitis, œdematous laryngitis, acute laryngeal œdema and erysipelas of the pharynx, are all practically the same thing, *viz.*, septic throat inflammations, differing only in localization and severity, and having the same general etiology. He maintains that this view constitutes a simple clinical application of bacteriological principles to this *group* of septic inflammations.

DISCUSSION ON TUBERCULOSIS OF THE UPPER AIR PASSAGES.

This was opened by Dr. WRIGHT, who spoke on etiology. He said that the stand formerly so boldly taken, that the tubercle bacillus was the sole factor in the etiology of tuberculosis, was no longer tenable. No one could, even for a moment, doubt that the *sine quâ non* in the etiology of what we now recognize as tuberculosis was the tubercle bacillus. This was partly due to the fact that pathologists, since the discovery of Koch, had ruled out of the category of tuberculosis those lesions which do not show the presence of the bacillus. This was a great gain in clinical as well as pathological classification ; but it has blinded many to the fact that, after all, the micro-organism is only one factor, which has been thrown into the foreground because of the impossibility of definitely understanding as yet the other factors. He called attention to the fact that the bacillus in the organism did not necessarily mean clinical tuberculosis or even histological tubercle. Its presence has been demonstrated in the upper air passages of healthy people. It is probable that every human being in civilized life received, at some one or more periods, a dose of the tubercle bacillus, sufficient, were the other factors also present, to produce fatal tuberculosis. Nearly one half have had demonstrable tuberculosis during their lives.

The speaker next called attention to evidence which went to prove that, besides the general systemic resistance to the activities of the tubercle bacillus, there resided in the upper air passages, not only a special protective arrangement against the entrance of the bacillus through the epithelium, but that there must necessarily also be some special withstanding influence after the bacillus had gained an entrance. He mentioned the various explanations which had been advanced to account for the passage of the bacillus through the epithelium. He stated that, in the infant and adult, the columnar epithelial lining was seen *post-mortem* to have a wavy undulating outline ; that it appeared too redundant to tightly fit the true cartilaginous tube of the larynx. This he demonstrated by a drawing of a section of an infant's larynx, and referred to Fraenkel's photographs of similar sections in the adult. This, together with the loose areolar tissue beneath, he claimed, was evidently a provision of nature in the normal state against the rupture of the epithelial lining, when the tube was dilated and put on the stretch by coughing, excessive use of the voice, etc. When the mucous membrane has become damaged and stiffened by inflammatory processes, there must be a tendency to produce larger or smaller gaps in the columnar epithelium, through which pyogenic cocci may enter the tissues beneath. He claimed that clinical evidence, as well as microscopical, tended to show that the tubercle bacillus, at least in adults, entered from the surface. Tubercular laryngitis in children was a rarity ; nevertheless, there was no conclusive proof that the bacillus was not carried, at least in some instances, to the larynx, by the lymphatics. There was no explanation why this should not occur as frequently, at least, as in the joints, except, possibly, the scantiness of communication between the external and internal lymphatics.

The discussion was continued by Dr. C. C. RICE (New York), who considered *Diagnosis*. (Paper read by title.)

The object of the paper was rather to cite the usual and unusual manifestations of tubercular diseases of the upper air passages than to follow the beaten track and endeavour in minute detail to tabulate the *differential diagnosis* of tuberculosis of the upper air passages as cited in the text-books.

Tuberculosis of the nares is an exceedingly rare disease. Willigk in 476 autopsies found only one in which the nose was involved. It is manifest in two forms—(1) the ulcerations, which resemble tubercular ulcerations elsewhere, and are found on the septum and the floor of the nose; (2) small papillary growths usually attached to the turbinated tissues.

The writer thought tuberculosis of the nares may be easily overlooked, since it may coexist with syphilitic ulcerations on the septum, and because small growths are often removed from the turbinated side without submitting them to microscopical examination. It is possible that some of these latter are of tubercular structure. We should be suspicious of any chronic ulceration of the nose which resists the effect of iodide of potash when it is associated with pulmonary disease.

Tuberculosis of the Palate and Pharynx.

In Willigk's 1307 autopsies of tubercular cases the larynx was involved 237 times, and the pharynx once.

The writer believed that tuberculosis of the fauces is usually associated with a *general acute tuberculosis* rather than with the chronic process commonly found in the lungs. The cases reported as primary in the fauces were not clearly proven. It is probably true that the infiltration takes place at the same time in different organs. Occasionally the disease is seen manifested in the miliary nodules in the soft palate before it undergoes ulceration. The only differential diagnosis of importance was, he thought, the syphilitic ulcer, and the same difference exists between these two ulcerations here as elsewhere.

Tuberculosis of the Larynx.

The author believed that 80 per cent. of all the cases of laryngeal tuberculosis can be easily diagnosed, but in the remaining 20 per cent. care needs to be exercised, and that in perhaps one-half of this number a decision cannot be reached without the aid of the microscope and the employment of iodide of potash.

The author considered the diagnosis of tuberculosis laryngis from three points of view. Firstly, he spoke of the diagnostic points of the ordinary or typical cases; secondly, he mentioned the very early appearances in the larynx, which are thought to be significant of an incipient tuberculosis, and which sometimes exist before it is easy to recognize any disease of the lungs; and, thirdly, he cites the irregular cases, difficult of diagnosis, because they may coexist with other disease of the larynx, or because they present unusual pathological conditions.

In regard to the first class of cases, he thought nothing could be more

typical than the semi-œdematous, semi-inflammatory swelling of the tubercular infiltrations and the superficial "moth-eaten" appearing ulcer which follows with its grey surface. These lesions differ from all others in that they are usually symmetrically bilateral and occur upon a very anæmic surface. The author thought it of little importance to consider the question as to whether the ulcerations are of different character in phthisis of the larynx, as he had little faith in the existence of "catarrhal" ulcerations, and thought the use of the words "aphthous" and "diphtheritic" as applied to ulcerations useless and misleading.

He mentioned as the earliest manifestations of tubercular laryngitis localized anæmia of the hard and soft palate in an otherwise healthy pharynx, and, with this, enlarged capillaries merging from the different portions of the palate towards the uvula ; secondly, enlargement of the papillary layer in the inter-arytenoid commissure, feebleness of action of the internal adductor muscles of the larynx. He thinks the presence of recurring papillomata of the vocal band a suspicious circumstance, and he believes that there is often an intimate relation between them and tubercular laryngitis. He considered localized congestion of the arytenoid cartilages or the slightest appearance of bogginess suspicious.

Under the third division he mentioned as one of the difficulties of diagnosis the frequent coexistence of tubercular and syphilitic ulcerations in the larynx, and thought the patient may have pulmonary tuberculosis and syphilitic ulceration of the larynx at the same time.

He cited as unusual one or two cases which presented that pathological condition common enough to syphilis, but very rarely seen in tuberculosis—namely, adhesive inflammation at the anterior ends of the vocal bands. He also cited three forms of growths which are seen at times in the tubercular throat. First, the granular hyperplasia, which is the ordinary granulation tissue ; second, the wart-like excrescences frequently seen in the inter-arytenoid commissure, and which are closely allied to the laryngeal papillomata ; and third, the small round tubercular tumours appearing beneath unbroken mucous membrane, microscopically found to consist of a tubercular structure usually containing tubercle bacilli.

Treatment was discussed by Dr. SHURLY, who confined his attention to medicinal measures. He enumerated the various drugs which have during the last few years been suggested for tuberculosis. To modify laryngeal and pharyngeal ulcerations he had found profit from inhalations of chlorine gas, topical use of iodoform, and solutions of sodium formate. As internal specifics, iodine and chloride of gold and sodium had power of positive value. Oils of cloves and castor assist in some cases. He advocated gavage, which reduces fever, and markedly increases vitality. We should always combine vegetable food with the usually employed meat extracts. Alcohol in laryngeal phthisis is generally too irritating. We should never take away hope from our patients. As an application in dysphagia, sodium formate, or bicarbonate with eucalyptus, cocaine and morphine, are useful. Tracheotomy increases suffering, and in his hands curetting and scarification have done no good.

Surgical Treatment of Laryngeal Tuberculosis. This was considered by Dr. J. W. GLEITSMANN (New York).

Dr. GLEITSMANN confined his remarks to the consideration of curettement with the single or double instruments. Surgical treatment is, broadly speaking, either endo- or extra-laryngeal. The former includes incision with knife or scissors, curettement, submucous injections, electrolysis or galvano-cautery; the latter, laryngectomy, with excision of diseased parts, extirpation of the larynx and tracheotomy; altogether, eight sub-divisions.

Gleitsmann has found recorded eight total and seven partial extirpations of the larynx for tubercular disease. In four of the total cases the diagnosis was made before operation, two were made on account of lupus, and two had been diagnosed as carcinoma; of the partial cases, five were made for tuberculosis, one for lupus, and one for supposed carcinoma.

As to curettement it is steadily gaining in favour. Only six out of seventy publications consulted are indifferent to or oppose it. We cannot hope that it will exert a favourable influence on the almost always present pulmonary complication, but we are justified in speaking of a cure of the larynx, when, in spite of the continuance of the pulmonary disease, the laryngeal symptoms have subsided, when the larynx bears a normal aspect, and, furthermore, when no trace of the disease is found *post-mortem*, conditions which are established beyond a doubt, and enumerated in literature. Relapses may occur, but curettement does not, of course, remove the diathesis, nor does any other treatment.

This procedure is contra-indicated in advanced lung disease, in disseminated laryngeal tuberculosis, presenting one large ulcerated surface, and in severe laryngeal stenosis. Two writers claim to have observed outbreak and hastening of the pulmonary process after curettement, but this is probably *post* and not *ergo propter*. Lesser objections are hæmorrhage, pain and difficulty of operations. Bleeding can, however, be averted by a solution of lactic acid and ferric chloride; strong cocaine applications will almost entirely obviate pain, and the remedy may be injected directly into the tissues. Difficulty of operating is now a logical objection to any legitimate procedure.

Curettement is analogous to the excision of a tuberculous point. It removes a diseased area, a focus of infection which is a constant drain on the already debilitated patient. It is, in properly selected cases, more effective, quicker and better in results than any other procedure. The infiltration of the arytenoid region, the great cause of dysphagia, can often be remedied at one sitting by the double curette. Healing is prompt, and cicatrization rapid. Moreover, the suffering of patients due to abundant nerve proliferations (Gouguenheim and Balzer) justifies arytenoidectomy. Even in active pulmonary disease, with hectic, diminution of dysphagia means more nourishment taken, and a consequent improvement in the general condition. Additional advantages gained are improvement in voice, cough, and respiration.

Indications for curettement are :—

1. Primary tubercular disease, without lung complication.

2. Cases with concomitant lung disease, either incipient, or which has stopped short of softening, or hectic.

3. Especially circumscribed ulcerations and infiltrations.

4. Dense, hard swelling of the arytenoid region, ventricular band, posterior wall, tuberculous tumours, and affections of the epiglottis.

5. In advanced lung disease, with distressing dysphagia from arytenoid infiltration.

Contra-indications are :—

1. Advanced pulmonary disease and hectic.

2. Disseminated tubercular disease of the larynx, leaving little or no area of healthy tissue.

3. Extensive infiltrations producing severe stenosis, where tracheotomy is indicated.

As to *technique*, Heryng's single curettes are best suited for cleaning and scraping of ulcerations ; Krause's double curettes and Heryng's rotary curettes for excision of tuberculous infiltrations. Sub-glottic lesions can be operated upon with Scheinmann's forceps ; and with laterally bent forceps an attempt may be made to reach also Morgagni's ventricles. Absolute quiet after operation is necessary ; and, until cicatrization is complete, daily applications should be made of lactic acid, or pyoktanin (one or two per cent.). Cicatrization occurs in from seven to twenty-eight days. Ulcerations well defined do better than if shallow and extended. Dense infiltrations, which are generally localized, do better than œdematous conditions.

After giving the statistics of Heryng, Gouguenheim and Krause, with their 455 cases, Dr. Gleitsmann narrated his own experience. The double curette was used in 12 cases, all with lung complication ; two operations were for infiltration of the posterior wall alone ; one for such, with affection of the ventricular band combined ; four arytenoidectomies ; three arytenoidectomies and excision of the ventricular band, and two of the latter alone. Arytenoidectomy had to be performed a second time on two patients, on account of recurring infiltration. One patient died from heart failure, and another from advanced lung disease ; four are without recurrence of laryngeal disease, from six to ten months ; one had an affection of the posterior wall ; another of the ventricular band, and two of the arytenoid region.

As to intra-laryngeal injections, Dr. Gleitsmann has used the lactic acid plan of treatment, and also that of creosote in an oily menstruum, recently suggested by Chappell, of New York. With lactic acid, he has seen one instance in which the injection of a few drops into an already infiltrated arytenoid region was followed by considerable swelling of the latter, and curettement became necessary, with a relief of symptoms following. With electrolysis the writer has had no personal experience. Tracheotomy is regarded as a justifiable procedure in urgent stenosis.

The paper closes with a most extensive bibliography of the whole subject, more than two hundred references being contained therein. While it is not claimed that it is complete, it is probably the most extensive yet published on this subject, and lays all students of laryngology under great obligations to its compiler.

Closing Session, Wednesday, June 19th.

The discussion on tuberculosis was continued by Dr. T. MORRIS MURRAY, of Washington, D.C., who had used lactic acid in some seven or eight cases of local ulceration. One case was curetted within two weeks of death—the uvula being also infiltrated. The ulcer healed, and the patient was rendered much more comfortable.

Dr. INGALS said that, comparing one thousand cases of operative with the same number of non-operative cases, he believed that more would recover in the latter category than in the former. A few cases recover under simple measures. He has used lactic acid without scraping, but in the deeper cases of infiltration curetting is necessary, though he regarded it as of doubtful propriety to cut away large masses of tissue. As a local application, he has used perchloride of iodine in solution (gr. i-ij.—3j). Cocaine he does not like, from its effects on the nervous system. Moreover, patients were not so well able to bear pain afterwards. For a local sedative, he preferred a mixture of tannic and carbolic acids, with morphine. It caused some smarting at first, but no pain afterwards.

Dr. DALY had seen cases recover under diet and inhalations, but especially iodoform, with which he salinated the patient. We are still remiss in the matter of public hygiene while we allow phthisical cases to travel in sleeping cars, stay at public hotels, etc. Creosote should be given in those cases where it can be borne.

In closing the discussion, Dr. WRIGHT expressed his scepticism as to the value of any treatment of laryngeal tuberculosis. While some cases healed under curetting and lactic acid, most of them did not. The disease did not always give symptoms, even where the ulcerations had penetrated even to the cartilage. The cures reported had been in cases limited to the first stage of the disease. Few cases were suitable for radical operation.

Necrosis of the Middle Turbinate. This was the title of a paper by Dr. A. B. THRASHER (Cincinnati).

The frequency of disease in this region is partly accounted for on anatomical grounds. The situation of the middle turbinate in the narrow apex of the naris, hemmed in on both sides by solid bony walls, leaves little room for inflammatory swelling, and causes great pressure when the parts are swollen. In acute rhinitis the lower turbinate is doubtless affected more frequently than the middle, but there is also less danger of implicating the deeper structures, or of occluding any of the natural openings of the accessory cavities. When the middle turbinate is inflamed the pressure on the adjacent walls is great, and the openings of all the sinuses are easily closed, thus causing a mechanical retention of the normal secretions, which in consequence may lead to a purulent inflammation.

While ethmoiditis is a comparatively frequent disease, necrosis of this bone is certainly rare. So seldom is it present that Zuckerkandl declares he has never seen it. Woakes declares that necrosis is present, as a rule, whenever there is ethmoiditis. This statement, however, is not

sustained by the published examination of his twenty cases, the pathologist only finding true necrosis in two out of the twenty.

Dr. Thrasher can see no reason why prolonged disease of this bone may not result in necrosis, just as is the case with other bones of the body. The projection of the middle turbinate into a narrow cavity where a small amount of swelling will cause pressure and occasion retained secretions either in the ethmoidal cells or in pockets formed by the unequal contour of the adjoining surfaces, all of which conditions are favourable to the development of violent inflammation, destruction of the vitality of the bone and consequent necrosis. Given a case of ethmoiditis and a polypus springing from under the middle turbinate, the conditions are certainly fairly ripe for the development of a necrosis of the middle turbinate. On the other hand, that a polypus may spring from a membrane bathed in the secretions from a purulent ethmoiditis is quite possible, as the analogous condition of aural polypi from a purulent otitis media with necrosis is certainly rather common.

No causal relation is believed to exist between cysts of the middle turbinate and necrosis of this bone, yet in one well-marked cyst of the anterior extremity of the middle turbinate well-marked evidence of beginning necrosis was discovered after removal.

The following clinical histories were given of two undoubted cases of necrosis of the middle turbinate.

Married woman seen in 1891 for a severe pain in left side of the nose radiating over entire left side of the face and head. Pain was constant, although subject to periods of exacerbation, so regular and so intense as to have called forth a prolonged anti-malarial treatment. Left side of her nose was slightly swollen. There was a creamy discharge from the left naris, flowing down from beneath the middle turbinate, and a bad odour, but not such as would lead one to expect necrotic bone. The anterior extremity of the left middle turbinate could be seen much swollen pushing hard upon the septum, and down upon the lower turbinate. The enlarged middle turbinate had much the appearance of a fibroid tumour. Severe influenza one year before.

This projecting mass was removed with a cold snare, the portion taken away being one inch long by about one-third in its vertical, and one quarter in its lateral diameters. The anterior extremity was somewhat bulbous. The mucous membrane was tightly drawn over a spongy bone, and perhaps one third of the outer portion of the bone was entirely dead. The adjacent ethmoid cells were exposed and thoroughly scraped with a sharp curette. There appeared to be no involvement of the other cavities, and with nothing else than a mild detergent spray the parts healed kindly, and the bad symptoms disappeared. The amount of pain experienced by the patient was so great that malignant disease was feared, yet the bad symptoms subsided quickly after the operation, and had not returned up to within six months ago, when the patient was seen for the last time.

A male, aged twenty-eight, seen in 1892, for an obstruction of nasal breathing. He suffered severely from neuralgia of the supra- and infra-orbital nerves, for which he had been under medical treatment for about

two years, with but slight temporary relief. The right middle turbinate presented as a large rounded mass, pushing out the outer wall of the nose, and filling the middle meatus. There was but little discharge, and that seemed to come from an hypertrophied lower turbinate on the same side. The left naris was much narrower than the right, but otherwise normal. In an endeavour to remove the growth, *en masse*, with a cold snare, the tissue broke down, leaving a large open cavity, with exceedingly thin walls. A part of the bony tissue removed bore well-marked evidence of being dead. There seemed to be no connection between the opened cyst and the ethmoid cells.

The sensation imparted by the probe while exploring this region often causes us to expect dead bone when we only feel rough or denuded bone. In neither of the foregoing cases was the odour of dead bone prominent, not as it is, for example, in syphilitic necrosis. In neither of the two cases was the writer sure of necrosis until he had removed the specimen, and only in the first case did he suspect it. The symptoms of middle turbinate disease are manifold :—

1. Pain, generally referred to the infra- or supra-orbital nerve, sometimes to the eye or orbit (more especially when the ethmoid cells are also involved) and occasionally to the ear.

2. Nasal discharge, sometimes of exceedingly unpleasant character. The discharge from the cells themselves often irritates the membrane in front, giving rise to a sore and red nasal extremity.

3. Obstruction to breathing and anosmia, but frequently the breathing channel is not impeded, even in severe inflammation of the middle turbinate.

4. Obstruction of the natural openings of the accessory cavities, notably the antral, frontal and anterior ethmoid, occasioning in each case its own train of symptoms.

5. External deformity of the nose only, and when the ethmoid cells are involved, the eye is often misplaced by orbital swellings.

6. Various reflex nervous phenomena.

Treatment.—When the middle turbinate is causing trouble, it is necessary, as a rule, to resort to surgical measures. In conditions of simple inflammation, a mild alkaline spray may be followed by relief; or, where there is much congestion, a little cocaine, and in worse cases scarification, or better still, a deep incision with a narrow sharp-pointed bistoury, may be needed. When, however, the case is of long standing, and you have reason to suspect either an osteitis or a necrotic bone, then a prompt removal of the offending tissue is advised. When this can be accomplished by a cold snare, this method is to be preferred. The drill or trephine may be necessary, to enable the snare to take hold. Casselberry's saw-tooth scissors work admirably well, in some instances. The Curtis drill is useful, in case the bony tissue is very firm, and it can be used at the same time to open up the ethmoid cells and break down the inter-cellular walls. It is not thought that this is a proper region for the use of the electro-cautery. The inflammation following the use of the cautery on the middle turbinate, except on the anterior tip, is apt to occasion serious swelling, painful pressure, and great danger of septic

infection. The cold steel wire snare does the work nicely, in the large majority of cases, and, in the writer's experience, has been followed by no serious symptoms.

Dr. THRASHER also related the history of a case of *Congenital Osseous Stenosis of the Naris*.

Baby C., aged eighteen months, was brought for impaired nasal respiration in April, 1895. He was a well-nourished, handsome boy, but inclined to mouth-breathing. There was a muco-purulent discharge from the right naris anteriorly. Digital examination of the vault of the pharynx revealed a mass of adenoids, to which was immediately attributed the nasal trouble. Under chloroform narcosis the adenoids were removed, when with the index finger of the left hand in the naso-pharynx the writer passed a curette through the right naris and ran against an obstruction just before he reached the finger in the naso-pharynx.

He could find no opening large enough to pass a small nasal curette. Firm pressure with the curette broke down the partition, which was of thin bone, somewhat thicker near the septum, and thinning out to apparently the thickness of an egg-shell at the outer wall. This osseous web was seemingly united to the lateral wall at the posterior extremity of the lower turbinate, but was not attached to the turbinate, as it could readily be detected by the finger in the naso-pharynx.

Dr. LANGMAID stated that he had seen three cases of congenital occlusion of the nares. He thought that in these cases the nose became functionally inactive, and that it was frequently some time after the removal of all mechanical obstacles to the respiration that mouth-breathing finally ceased.

Dr. INGALS had seen no congenital closure cases, but thought that partial closure of the posterior nares was very common, and frequently overlooked in adenoid cases. He always made it a point while operating on the latter to pass a probe through the nose, and so determine the patency or non-patency of the nostrils. This could be done while the patient was still anæsthetized.

Cysts of the Oro- and Naso-Pharynx.

Dr. JONATHAN WRIGHT reported two cases of this nature, criticizing some of the statements made ten years ago by Tornwaldt with regard to diseases of the so-called pharyngeal bursa, and the frequency of naso-pharyngeal cysts. Sinuses in the naso-pharyngeal mucous membrane are not, Dr. Wright maintains, very common, and cysts are very rare. Many catarrhal cases owe their origin to neither cysts nor sinuses. Finally the so-called "bursa" is not a normal characteristic, but the result of chronic inflammations. Dr. Wright spoke of the mode of formation of such cysts by the agglutination at their edges of the folds and projections of the mucous membrane in infancy and adolescence, whereby result sinuses or closed cavities. In the former may be produced and discharged thick muco-pus, while in the latter the accumulation of and distension by muco-pus of the surrounding walls gradually leads to cyst formation. Glandular retention cysts are excluded, as glands are

exceedingly scarce in the neighbourhood of lymphatic tissue in the nasopharynx, and, when they are seen, show no tendency to cystic dilatation.

Dr. WRIGHT also drew attention to drawings made of a section through the folds of the mucosa in the pharynx of a still-born child. Near the bases of the folds were evident oblong spaces, either just where the lymphoid tissue bordered on the connective tissue, or just within the confines of either of these two historical elements. These spaces were lined with a single layer (frequently incomplete) of endothelial cells. These openings should be considered as lymph spaces, visible, because they were not gorged with the round cells which crowd them elsewhere. It is possible that retention cysts might originate from these spaces becoming closed cavities. The writer then gave the clinical histories of the cases suggesting the title of the paper, and presented drawings of sections made.

Papillary Fibroma of the Septum Nasi.

Dr. WRIGHT also exhibited drawings of a case of this nature. In a previous paper ("New York Med. Journ.," December 26th, 1891) he called attention to the confusion in nomenclature introduced by Hopman, in calling papillary hypertrophies and papillary fibromata by the one name of papilloma. Differing as they do in pathogenesis, structure, and usual situation, and having only in common occasionally the same appearance to the naked eye, there is no excuse for the term which has, unfortunately, been adopted by the majority of authors. The history of the case reported by the writer is, briefly, as follows :—

A Roumanian woman, twenty-eight years old, had frequent epistaxis in childhood, but was not sure from which nostril. For past seven years had left nasal obstruction on forced inspiration. On examination there presented anteriorly in the left nostril a vascular, soft, papillary, pedunculated, movable mass, which was easily and completely removed by the cold snare with only moderate hæmorrhage. It was irregularly globular and flattened by pressure from the ala. The site of all ailment was the upper part of the cartilaginous septum, at a spot about two centimètres from the columna. After removal, inspection showed that this spot coincided with a region which was subjected to the attrition of the upper edge of the triangular cartilage which forms the ridge known as the "plica vestibuli" (Zuckermandl), and which in this case rubbed against the septum when the lower edge of the triangular cartilage rolled out by muscular action in the dilatation of the alæ nasi during inspiration. The base of the growth was cauterized. No recurrence in nine months.

Microscopical examination showed the pedicle to be made up of fibrous tissue, with numerous branches covered with columnar epithelium, approximating a squamous type where subjected to irritation. The stroma was scanty, but contained a large number of lowly-organized blood vessels honeycombing the neoplasm at some points. There were some serous infiltrations of the stroma, with a moderate number of round cells. Occasionally the epithelium formed digitations into the stroma. In places the columnar epithelia still retained their

ciliæ. Even with a one-twelfth homogeneous immersion objective it was impossible to make out any stickle cells among the squamous epithelium.

Dr. NEWCOMB stated that he had recently removed with the cold snare, and without bleeding, a naso-pharyngeal cyst. Examination had not yet been made.

Dr. LANGMAID had also recently removed a fibro cyst from the naso-pharynx. Its attachments forbade the use of the snare, and avulsion was employed without bleeding.

The Relation of Vaso-motor Disturbances to Disease of the Upper Tract.

This topic was discussed by Dr. DALY. He spoke of the usual tumescent condition of the nasal mucosa, and of the pallid condition described by Glasgow, in which there was a constant leakage of sero-mucus. His statistics showed a cure in 63 per cent. of catarrhal and hay fever asthma, in which treatment had been directed to the interior of the nose, and in 40 per cent. of asthma of the spasmodic variety.

He would conclude that :—

1. Abnormal vaso-motor disturbances may be either primary or secondary.

2. Both may be active and progressive.

3. The surest and quickest relief is afforded in those cases in which surgical interference finds its proper election.

Dr. MULHALL thought that there were two kinds of vaso-motor disturbance in the nose, analogous to the changes in circulation of the blood from anger, which made some people flushed, and others pale. Much relief could be afforded in this class of cases, by proper exercise and mode of life, without any intra-nasal treatment whatever. He advocated daily cold water frictions, mild galvanism, a dose of 1-120 gr. atropia, in the morning, on an empty stomach, and one-drop doses of Fowler's solution, after meals.

Dr. SIMPSON put less faith than formerly in the theory of reflex disturbance. Nasal polypi might excite asthma from great irritation ; but there were other causal influences behind the polypi. He narrated several clinical cases to illustrate his point, and thought that if we would closely examine our patients, it would be found, in many instances, that the cause of the trouble was near the seat of disease we had to treat.

The Cigarette Habit.

This was the title of the closing paper of the Congress, read by Dr. MULHALL. Chewers, he said, smokers, and snuff-takers each derive a special variety of satisfaction from the use of tobacco. Cigarette smokers, from their usual habit of inhaling the smoke, derive more pleasure than cigar or pipe smokers. The smoke does not penetrate into the pulmonary structure beyond the first division of the bronchi. The smoker accustomed to certain degrees of satisfaction does not find it in either a milder or stronger cigarette, or in a cigar. The feeling experienced is a pleasurable irritation of the laryngeal and tracheal fibres of the pneumogastric nerve. It is a nicotine satisfaction.

The amount of absorption of this drug varies according to the extent of surface—which in inhalers is three times that of non-inhalers. Three cigarettes are considered to have the nicotine strength of one cigar, and there is no reliable evidence to sustain the assertions of the anti-tobacco champions that the cigarettes are adulterated with opium or other deleterious drugs. Cigarette smoking is a “deadly” habit because of its frequency. Its effects are analogous to those of giving a certain amount of drug in small and frequent doses.

The constitutional effects are those of tobacco in all forms—always nicotinism. On the young the results are most pernicious, though less harmful in adolescence. Cigarettes may be said to teach the use of tobacco. The first cigarette never nauseates. Locally the drug may aggravate pre-existing trouble, but it rarely originates any disease worthy of the name. There may result a slight hyperæmia of the mucosa, or an insignificant catarrh, with a pearly secretion ejected in small pellets with a single slight cough. Once in a while a whistling *râle* is heard over the bronchi, but only in the case of deep and excessive inhalers.

Mario, the great tenor, inhaled constantly, and between the acts of the opera. Maxwell, the St. Louis murderer, while in prison inhaled forty cigarettes daily, and, though he was a nervous wreck, his throat did not show any signs of disease, as was proven by a *post-mortem* examination.

Dr. INGALS remarked that he could not accept the doctrine that tobacco did no harm to the throat, as he had seen pronounced tracheal cough in inhalers.

Dr. SEILER thought that the habit of continual spitting of some cigar and cigarette smokers was the real cause of the local trouble, as this habit led to an abnormal dryness of the pharynx.

Dr. LANGMAID believed that he could tell by the colour of the mucosa of the pharynx whether a man smoked or not. Cigars have less bad effect on the throat than pipes, owing to the heat in the stem of the latter, and to the relatively larger mass of fire in the bowl. He thought that the effect on the young of tobacco in any form was especially destructive to the power of consecutive thought. As to Mario, it was notorious that he never really exerted his vocal powers more than once a week. The rest of the time he merely intoned. He thought that, as a general thing, tobacco was distinctly deleterious to the finer qualities of the singing voice.

During the Sessions of the Congress, the following papers were read by title :—

“Foreign Bodies in the Oesophagus.” Dr. HARRISON ALLEN, Philadelphia.

“Cyst of the Maxillary Sinus.” Dr. CHAS. H. KNIGHT, New York.

“Pemphigus of the Pharynx and Larynx.” Dr. M. R. BROWN, Chicago.

“Compensatory Arytenoid Movement.” Dr. WILLIAM PORTER, St. Louis.

“A Study in Diphtheria.” Dr. S. H. CHAPMAN, New Haven.

The following gentlemen were elected to Active Fellowship in the Association :—

J. E. BOYLAN, M.D., Cincinnati, Ohio. Thesis, Herpes Chronica Pharyngis.

F. E. HOPKINS, M.D., New York. Thesis, Oedema of the Larynx, with report of a case.

THOS. HUBBARD, M.D., Toledo, Ohio. Thesis, The Treatment of Acute Laryngitis.

J. E. H. NICHOLS, M.D., New York. Thesis, The Intra-nasal Causes of Headache.

The election of Officers for the ensuing year resulted as follows :—

President—Dr. W. H. DALY, Pittsburg, Pa.

First Vice-President—Dr. JONATHAN WRIGHT, Brooklyn, N.Y.

Second Vice-President—Dr. A. W. DE ROALDES, New Orleans, La.

Secretary and Treasurer—Dr. H. L. SWAIN, New Haven, Ct.

Librarian—Dr. J. H. BRYAN, Washington, D.C.

Pittsburg was selected as the next place of meeting, the date to be determined by the Council.

FRENCH SOCIETY OF OTOTOLOGY, RHINOLOGY, AND LARYNGOLOGY.

Meeting, May 1st, 1895.

On Acute Ulcerative Lacunar Tonsillitis. By Dr. E. J. MOURE, Lecturer in the Faculty of Bordeaux.

As the title of this paper indicates, my object is not to study in this place the different forms of ulceration which may have their seat in the buccal tonsils, but to call attention to a somewhat unrecognized lesion, or at least one which has been very inadequately described up to the present.

I have chiefly undertaken this work for the purpose of indicating a point in the pathology of the tonsils, and it is my endeavour to make it a chapter by itself, devoted to a series of lesions which have generally passed without being perceived or have been buried under various appellations, a fact which I shall have little difficulty in demonstrating.

I. Without carrying my bibliographical researches back to Hippocrates or Galen, and without professing to have gone through all the French and foreign literature, I have, for all that, carried out a considerable amount of research in the treatises on international medicine in the different dictionaries, and in the majority of special writings, in order to be able to affirm that most authors are dumb with regard to this question. Almost all of them accept a uniform classification in which infectious ulcers (tuberculosis, syphilis, formerly scrofula) alone occupy a distinct place side by side with the ulcerations arising from eruptive fevers, to which all give equal importance.

Without recalling here the names of the numerous authors in whose

works I have sought in vain for a description of the simple ulcer of the tonsil, I will confine myself to those who appear to have made some allusion to this point in special pathology, or who have brought forward observations which may fall into the same list with those which I have myself collected.

Lasègue was the first to describe in his "*Traité des Angines*" (Paris, 1868, pages 122 and following), under the designation of simple acne of the tonsils, certain small elevated pustules, which were red, papulous and miliary. In another form pustulous acne, which much resembles the disease known now by the name of caseous tonsillitis, he adds that the disease develops without discomfort and without fever. The following example reported by this author shows well that the so-called acne was simply lacunar tonsillitis, with a collection of cheesy skin.

CASE REPORTED BY LASÈGUE.¹

1. Dr. N., thirty-two years of age, whose mother was gouty, had been himself subject to certain articular pain. Towards the end of the winter 1850-51 he was attacked with a cough, which seemed to him to be provoked by an irritation of the glottis, which disappeared under the influence of gargles. In the month of April, 1851, he experienced a sensation of dryness in the pharynx, accompanied by a feeling of the necessity of hawking up something, and for the first time he spat out a concretion from his throat. Various disturbances of health followed this and distracted his attention from it. In the first place a generalized pulmonary disease; later on inflammatory sore throat, which came on while he was attending a child with malignant angina; an attack of cholera; and, lastly, symptoms which gave rise to fear of the supervention of pulmonary tuberculosis. The patient decided to remove to the south. His strength returned, his health greatly improved; but he continued to expectorate concretions. He calculated at about the amount of a teaspoonful the quantity that he expectorated in four years. In general he spat out one or two in the fortnight, and occasionally he went six months without seeing one. The consistence and the place of origin of these concretions are variable—they are sometimes calcular, sometimes softer, without smell, greenish in colour, and turning brown on exposure to the air. The majority of these concretions came from the tonsillar crypts, according to the patient, who was not able to be perfectly sure on the subject; sometimes from the pharyngeal glands, from the middle of which the concretions at first project in the form of a narrow point before becoming detached. When they are spat out they leave at the centre of the gland a depression which marks the place that they occupy. They contain over and above a certain amount of organic matter, phosphate and carbonate of lime.

A little later Trousseau described in his "*Cliniques*"² a primary gangrene of the tonsils, somewhat analogous to the affection which we are now studying, but differing from it in the exceptional character of the prognosis. This gangrene was characterized by the presence on the tonsils of grey patches, somewhat black and circumscribed by sharply cut and yellowish borders. After the slough had fallen off, either spontaneously or under the influence of cauterizations, there remained in its place an ulceration which, according to Trousseau, may remain limited, but which in some cases extends to the neighbouring parts, such as the soft palate, the alveola, the pharynx, and even the larynx; but the mucous

¹ "*Traité des Angines*" (Paris, 1868).

² "*Cliniques de l'Hôtel Dieu*" (Paris, 1877), vol. i., p. 429.

membrane surrounding the necrotic parts is red, livid, and even œdematous, the breath being characteristically fœtid. The cervical glands are enlarged in the majority of cases, and the general symptoms are of such extreme gravity that death is very often the termination of this disease, a typical example of which Trousseau narrates as observed along with Dr. Millard. This series of functional and local trouble differs to an extraordinary extent from the type which our different observations follow. We might compare with these the cases published by Ramon de la Sota (Seville) concerning in the same way primary gangrene localized in the tonsils, which we shall here abstract.

In the first case¹ the patient was a vigorous mason, without pathological antecedents either general or local, who one day experienced shooting pains in the left tonsil, for which he made use of soothing gargles. When first seen his outer aspect was excellent, the breath was fœtid, the teeth were healthy, as also the cheeks and the lips, the palate, the pillars of the voice, and the right tonsil. The left tonsil alone was very much swollen, of a dull red and black in places; its surface was mammillated. The probe entered easily into the glandular tissue, which it readily broke down. The diagnosis was primary gangrene of the tonsil, the treatment local antiseptic and general tonic *régime*. At the end of a month all went well and the patient disappeared, but only to return several months afterwards much emaciated and cachectic. The tonsillar lesions had reappeared in a more extensive form than before, and in spite of treatment the patient fell into a state of marasmus and succumbed to his malady, which had extended to the mouth and pharynx.

The second case concerned a lady, aged thirty-two, affected in the same way, who succumbed to a severe hæmorrhage following a local incision made with the object of relieving her, the borders of the incision becoming gangrenous in a few days. In a third case, in a woman of thirty-six years of age, the lesions were more diffused and recalled what is known with regard to this local gangrene, which has nothing in common with the ulcer described in our work. In his inaugural dissertation on ulcerative angina of scrofulous nature, M. Tangère² makes no allusion to these isolated lesions, and when he describes changes in the so-called scrofula he is careful to affirm (p. 52) that the tonsils are always the last places to be affected in these cases. Similarly M. Homolle,³ in his well-known work on serious scrofulides of the mucous membrane, says nothing about these tonsillar changes, although he gives among his cases (p. 224) one which he heads "Ulceration of uncertain nature, probably scrofulous, with excavation of the tonsil," which he endeavours to class under the heading of scrofula. Dr. Natier refers to it later in his work upon gummata of the tonsils⁴ as possibly an example of these lesions. We reproduce, however, the case published by M. Homolle *in extenso*, so that its value may in no way be depreciated.

¹ "Tres casos de angina gangrenosa primitiva" (Arch. Internac. de Laringol., Nos. 8 and 9, May and June, 1891).

² Thèse de Paris, 1871.

³ Thèse de Paris, 1875.

⁴ Natier: "Annales de la Policlinique de Paris," 5th Nov., 1890, p. 123.

Case 2. *Ulceration of uncertain nature, probably Scrofulous, with Excavation of the Tonsil.*—L., aged twenty-eight, a waiter in the Salle Saint-Charles, No. 40, à la Charité (under Dr. Damaschino, deputy for Prof. Sée, July and September, 1874). A man of moderately good constitution, born of a consumptive mother, but personally free from any specific infection. He had certainly had gonorrhœa two months previously, but appears to have had no syphilitic manifestations. In the month of April of this year the patient suffered for the first time with his throat, the soreness of the throat being accompanied by febricular disturbance and a cough. In May the cough increased in frequency, and the patient had to leave his work. At the same time the intensity of the pain increased. It was worse during swallowing, and especially when the patient swallowed any wine, which he had been obliged to give up for three weeks. For six weeks the voice was nasal, the saliva was very abundant, and he had never spat up any blood. When he left work on the 12th or the 14th of May the practitioner who saw him observed an ulceration of the tonsil, but much smaller in extent than what existed at the present time. Cauterization was frequently repeated; the patient was submitted to anti-syphilitic treatment, but he continued to smoke.

His present condition on examination: In addition to the functional symptoms already indicated, within the last few days there have been severe pains affecting the left ear and temple, to such an extent as to prevent sleep. Hearing is good in the interval between the painful exacerbations, but becomes much diminished. For the first time liquids returned through the nose on the 15th or 16th of June. Sense of smell diminished, that of taste almost lost, and the sensitiveness on touch is by no means excessive. The whole isthmus of the fauces is of a bright red. The excavation on the left side presents at its upper portion a somewhat unequal projection constituted by the tonsil, the dilated follicle of which encloses caseous deposits at three spots. The tonsil is sharply cut by an ulceration, which occupies the whole of the excavation in its lower portion, and reaches down towards the epiglottis. This loss of substance is deep, freely cut, pulpy at its base, of a uniform yellowish-grey, without lumps. The posterior pillar cannot be distinctly observed behind the ulceration. The treatment—syrup of iodide of iron, with iodide (iodide of potassium, five grammes in two hundred and fifty grammes of the syrup) injections with solution of eucalyptol oil, one gramme in a hundred of alcoholized water. The first nights passed in the hospital were bad, but at the end of a few days there was a distinct amelioration. The posterior pillar was seen as a small grey column, which, from its colour, stood out on the floor of the pharynx, but was not easily distinguished from the base of the excavation. The latter was still grey and pulpy, but one could see a few granulations of a pink colour. The epiglottis, of a bright red colour and shiny, was not markedly deformed; the vocal cords moved well, but seemed a little thickened.

27th July. The ulceration is less uniformly grey and pulpy, the granulations more numerous.

7th August. Considerable improvement—one might almost say recovery. The right half of the isthmus is less swollen, but still presents a certain degree of hardness to the touch. The mucous membrane is of a diffuse rose-violet pale tint. The ulcer is much cleaner, except at one point on the floor of the excavation, where there remains a little pulpy deposit; the posterior pillar, which is slightly mammillated, can be seen adhering to the back of the pharynx, in which it is almost lost. The pain has ceased; deglutition is easy; the voice still a little stuffy, and for some days the patient has suffered from acne and coryza of iodic origin. At this stage of considerable amelioration the patient left the hospital. A week later there developed upon his scalp, and then upon different parts of the body (shoulders,

and epigastrium, internal and superior portions of the thigh) pimples of the size of lentils at most, which suppurated and became covered with brown crusts, and which on the head at least, presented all the aspect of an impetigo. A few days later the throat became painful, and the tonsils swollen as happens in an acute sore throat. On the inner surface of the swollen right tonsil was seen an elongated ulceration running up from above downwards, of very slight depth, pulpy, and of a yellowish-white colour. On the back of the pharynx could be distinguished several eminences or granulations of the size of a large millet seed, red at the base, yellowish and pulpy at the apex. The impression which this case gave me during the first sojourn of the patient was that it was an ulceration primarily provoked by the retention of the products of secretion of a follicle, afterwards kept up and aggravated by repeated cauterization ; but the occurrence of the infection shortly after the first attack led me to suppose it was due to a constitutional influence, probably of a scrofulous nature.

The preceding lesion presents several points of resemblance to the ulcer which we are studying, but differs from it considerably in its aspect, and particularly in its course, which is rather that of a syphilitic lesion, and very probably tertiary. Morell Mackenzie, in his treatise on diseases of the pharynx and larynx,¹ describes under the name of ulceration of the throat an affection which is met with, he says, in people in feeble health, or exposed to septic poisons ; students who follow assiduously hospital practice, and who devote a good deal of their time to dissections are, adds this author, particularly subject to this form of affection, to which the Germans have given the name of *angina nosocomii*.

Among the symptoms Morell Mackenzie notices feebleness of the pulse, subnormal temperature, general lassitude—in a word, a collection of disturbances of nutrition such as we have not met with in our cases. On examination there is found in these cases a series of small ulcerations which have no tendency to become confluent, and which vary in their extent from the size of a grain of millet seed to that of a one franc piece. We shall see further on that this is not the form of ulcer with which we are concerned. The variety of tonsillitis to which the English author makes allusion finds its place among the local symptoms of a general infectious disease, such as typhoid fever, or any other affection of this kind. Lesions of that sort have a certain analogy to those that are observed during the course of certain severe eruptive fevers, or during the period of convalescence following them.

In 1886 M. R. Filloux, in his thesis on ulceration of the tonsils, described (p. 9) losses of substance following acute tonsillitis, which he compares to the follicular ulcerations of Forster : “They are,” he says, “small, superficial, and preceded by the classical symptoms of acute inflammation of the tonsils.” Next he describes as he goes on typhous ulcerations produced by necrobiosis of the follicles due to venous con- gelation or enderitis. A little further on he speaks of variolous and scarlatinal ulcers with the pultaceous deposits which accompany them. All these typical symptoms could not, as we have said, find their place in the frame that we are about to design.

A little later (p. 13) the same author, studying ulcerations following

¹ Translated by E. J. Moure and F. Werthier. Paris, 1882 ; page 42.

phlegmonous tonsillitis, continues as follows:—"In certain cases the suppurative tonsillitis does not follow a distinct acute tonsillitis. There forms in the tonsil an abscess, but only in a slow way, taking from a fortnight to three weeks. This occurs as in our case in people who have enlarged tonsils affected with chronic tonsillitis—in the scrofulous. The abscess opens outwards, and at the same time from the orifice of the abscess there falls out a sort of a plug, which afterwards leaves a large ulceration somewhat flat, with an irregular margin, but distinct and well cut out. This ulcer is covered with a pulpy detritus, which is very slightly coherent. When the ulcer is cleared the pus is seen to be covered with granulations.

"This ulceration, longer than the one previously described, lasts for a certain time, and does not cicatrize so quickly. It is, in a word, a subacute suppurative amygdalitis which comes on insidiously in the subjects of chronic tonsillitis, who present the attributes of scrofula. The abscess leaves behind it an ulceration which shows no tendency to rapid cicatrization. This ulcer is a mixture of phlegmon and superficial gangrene. It is, in a word, a scrofulous ulcer.

"The ulcer may follow the ejection of a slough. It is then gangrenous angina. We see then, at one part of the tonsil a blackish slough which suppurates, and after it falls off, there remains an ulceration whose size and extent vary with that of the slough which has produced it. It presents no special characters when once this has fallen off, unless, perhaps, that it may take on the appearance of any one of the different forms.

"The base of the ulcer is granular; it is in general covered with a greyish, pulpy detritus, which can be easily removed. The gangrenous ulceration cicatrizes slowly, consequent upon the very nature of the inflammation which has produced it." On the basis of this description, which resembles in certain points those which we are going to make, M. Filloux narrates an interesting case which, we think, ought to be reproduced *in extenso*. It is almost the only one which we have found of this kind, and still I would not venture to affirm that it is not one of true chancre of the tonsil, as would seem to be indicated by the long duration of the disease, and the special affection of the submaxillary gland observed in the case.

Case 3. (Thèse de M. Filloux, Paris, 1886.) *Phlegmon Amygdalien taken for Indurated Chancre*.—J., aged twenty-one years, received 28th December, 1885, Salle Saint-Laudry No. 31 (bis), at the Hotel-Dieu, in the wards of Professor Richet. He complained of sore throat, and on his admission there was made out the presence of an ulceration of the left tonsil. The young man presents all the characteristics of the scrofulous diathesis (scars on the neck, etc.), has never suffered from syphilis, nor from gonorrhœa. The ulceration on the tonsil dates from three weeks. The patient states that from his childhood he has been subject to disease of the tonsil and of the throat in general. One sees obviously that the other tonsil has slightly increased in size, projecting into the orifice of the isthmus of the fauces. His affection commenced towards the end of November with a sore throat, which had come on slowly and insidiously. There was no symptom of acute angina, either fever or stomachic disturbance. Little by little deglutition

has become painful. He consulted various doctors who, he says, cauterized the left tonsil several times.

Finding no improvement, and further perceiving that swelling of the submaxillary gland was taking place, he came to the hospital on the 28th December, 1885.

The following symptoms were observed: The right tonsil was healthy, but slightly increased in size. On the other hand, on the left tonsil could be observed an oval ulcer, whose long axis followed that of the mouth, becoming narrower at the two extremities. This ulcer had distinct, well-cut edges, and presented a certain degree of induration when touched. This induration extended also to the base of the ulcer, but not far beyond its margin, so that the tonsil was not indurated *en masse*.

The base was covered with a pulpy, greyish detritus, which could be removed with considerable facility by means of a camel-hair brush. When this was removed the base could be seen to be covered with fine granulations; its surface was somewhat pale, and did not bleed on touch. In addition to these ulcerative signs, the patient had an enlargement of the submaxillary glands, the glands were indurated, increased in size, not painful, and two only were affected. In addition, he complained of pain in swallowing, especially when the bolus of food passed the isthmus of the fauces. There were, further, certain slight pains provoked by pressure on the ulcer. In the presence of this condition of the ulcer one at once thought of a hard chancre of the tonsil.

The insidious onset, the long duration of the ulceration, the absence of the symptoms of phlegmonous angina, the moderate induration round the ulcer, the slight adenopathy—all made one lean towards the opinion that it was a hard chancre. Meanwhile, after having examined it carefully, Prof. Richet, trusting to the formal denial on the part of the patient of any possible contagion, and with a view to the slight hypertrophy of the other tonsil, the small degree of induration which existed round the ulcer, the very slight affection of the glands, consisting of somewhat enlarged glands, although hardened, thought that the ulceration was due to a superficial abscess of the tonsil, accompanied by a slight modification of its surface. This was a phlegmono-gangrenous ulceration in a strumous subject.

The following treatment was ordered: the surface of the ulcer to be painted every day by means of a brush dipped in sublimate solution. We followed this patient for eight days, and he left the hospital on the 19th January at his own request. At this time we were able to note that the ulceration had disappeared, so to speak, although there was still a slight superficial loss of substance.

On December 21st, 1888, Prof. Schnitzler communicated to the Society of Medicine of Vienna, under the name of ulceration of the tonsils, a case of lympho-sarcoma which had no resemblance to the cases we are now studying.

Finally, more recently, Prof. Fournier, in a lecture on chancre of the tonsils,¹ said *à propos* of the differential diagnosis (§ v.): "Lastly, I shall signalize as likely to simulate chancre of the tonsil, an affection as yet little known and not classical, and at present called, for want of a better name, lacunar tonsillitis, which consists in ulcerations of uncertain origin which form on the tonsils. When these ulcerations are unusually deep, they simulate gummata; if less deep, they may take on absolutely the appearance of a chancre." In these few lines the professor of

¹ "Bulletin Medical," February 3rd, 1895.

St. Louis shows on the one hand that he recognizes these so-called lacunar ulcerations; but on the other hand he admits that they are not well-known, and that they are not described in the classical books as we have said at the commencement of this work. It is in fact this particular and special form of loss of substance that we wish to study, *à propos* of several cases met with in our practice during the course of the past medical year, and of the present one so far as it has gone. The first fact which put us on the track of this diagnosis, is as old as three years ago, and concerns a medical student. We think it right to reproduce it here, because it is very instructive, owing to the hesitation which it caused us, and the practical result to which it led.

Case 4. (Personal.) *Catarrhal Inflammation of the Right Tonsil*.—X., aged twenty-one, a pupil at the School of Naval Hygiene. His hereditary tendency strongly arthritic and herpetic. No tuberculosis nor syphilis. The only personal antecedents worth mentioning are towards the age of sixteen obstinate mégrims, which, after having remained rebellious to all treatment for seven or eight months, disappeared of themselves. He smokes in moderation, but has always a slight pharyngitis and some granulations.

One morning, in the month of June, 1892, he felt a discomfort rather than a pain in his throat during the movements of deglutition. After having made out for himself that his right tonsil was the seat of an ulceration, he presented himself as a patient. The physician, Dr. Vergniaud, examined him for some time, and asked him if he had had syphilis, but on his giving a decided negative answer, he recommended him to go to Dr. Moure's clinique for laryngology. Dr. Moure was then able to determine that the upper portion of the tonsil immediately behind the anterior pillar of the soft palate had on it an ulcer covered with a whitish pultaceous coating. This was only very slightly adherent, and could easily be removed so as to lay bare a roundish loss of substance with its orifice opening upwards and of a diameter of six or seven millimètres. Further, the introduction of a probe, which was not particularly painful, showed that it measured about a centimètre in depth, and that its margins were clearly cut out. The rest of the tonsil was slightly inflamed, without any appreciable swelling. The left tonsil and the pharynx, the palate and its pillars, were normal, and there were no enlarged submaxillary glands. Dr. Moure then thought of tertiary syphilitic ulceration, and although he did not say so in so many words, X, understanding what was referred to, protested energetically and insisted that he had not had syphilis. On the other hand, a very careful examination seemed to enable us to eliminate every possibility of hereditary syphilis. Specific treatment was, therefore, not employed, and applications were ordered of the following:—

Iodine	
Carbolic acid	50 centigrammes.
Iodide of potassium	1 gramme.
Glycerine	50 „

and gargles of the same solution diluted.

Under the influence of this treatment the aspect of the ulceration was rapidly modified. Next day there was no white coating, but the opening was still present. In a few days it diminished in size, and at the end of six days it had almost completely disappeared. To-day—that is to say, after about three years—one can still recognize the place where it was, because it has left a slight excavation; but there has been no new ulcer. Since that time there has been no similar affection in any other part of the tonsil.

In presence of the rapid ulceration of this lesion, which resembled many others of the kind that I had always considered up to this date as being of a syphilitic nature, and which I had always thought cured by the mixed treatment, *although in reality they got better of themselves*, it seemed to me that we were in the presence of a tonsillar change, which is up to now insufficiently studied, and of which it was necessary to acquire more exact information.

From this time I noted with care all the analogous cases, collating not only the clinical symptoms which were similar in all, but in a number of the cases removing by means of the punch forceps nearly the whole of the ulcer, in order to submit it to bacterial and microscopical examination, on which I shall report further on so as to be able to determine the nature of the disease more accurately.

II. Symptoms and diagnosis. As it is easy to see from the description of the few cases which accompany this work, these lesions are not habitually accompanied by any well-marked general febrile reaction; more often, indeed, the onset is insidious, almost escaping observation. When first the patient experiences discomfort in deglutition or pain, the lesion is already present. From this it arises that we are very seldom able to see the ulceration at its commencement, and to decide if the pathogenesis which we have supposed is absolutely true.

When the patient comes to consult us we can generally make out on one of the tonsils, sometimes upon both at once (see case 6), a greyish ulceration, covered by a caseous magma, which is easily removed by means of the wool holder, so as to lay bare a sanious surface, mammilated, reddish, and formed of small granulations, sometimes even of unquestionable polypoid excrescences, as in the example of which we here reproduce the appearance. The borders of the ulcer are very well marked, red, inflamed, when punched out, without being very notably swollen, and the rest of the tonsillar gland does not seem involved, or to any great degree increased in size. The lesion is simply a local one, affecting only one part of the tonsil, and apparently developing on one or more crypts without affecting the neighbouring parts. At the first aspect one would think of a cauterization made with a hot point over a very limited space, at the stage when the eschar is about to come off, that is to say, three or four days after the application. Further, the cicatrization follows the same course, and the loss of substance which results from this lesion resembles that left by localized ignipuncture so much as that it might easily be mistaken for it.

I have already insisted on the absence of peripheral inflammation; I should add, however, that very often the tongue is a little coated, the breath a little heavy, without being absolutely foetid. It is not uncommon to find on one tonsil two ulcerations, or even three, which are there separated by portions of the gland tissue, which are scarcely inflamed at all. The ulcers each develop separately, without having any tendency to unite. Often, indeed, there are different stages of their evolution, for one is almost well while the other is in full force. It is not a case here of small, cupola-formed, almost microscopic ulcerations, such as have been described in acute lacunar tonsillitis, but large losses of substance

which may attain the dimensions of a half-franc piece, and often more. Their form seems to be very variable, but in general, although the borders are irregular, the lesion as a whole is of a more or less oval or rounded form, as if it had been made with a punch in a softish tissue, which allowed itself to be crushed rather than cleanly cut. The ulcer is always fairly deep, and we have seen it in several cases go nearly to the bottom of the tonsillar fossa. The pillars have almost always remained intact in the cases that we have observed. Meanwhile they may be slightly reddened and infiltrated if the ulcerated gland is of small size and adherent to the pillar (hooded). Although the lesion is a local one, the patients are usually somewhat weak, and more or less anæmic, but there is no fever or other general symptoms. Tumefaction of the submaxillary gland is generally *nil*; however, it is sometimes present, and in such cases the engorged glands are few in number—one or two—and painful to the touch. Often, indeed, external pressure on the part of the neck corresponding to the tonsil causes a somewhat acute pain. These functional troubles are, in general, transitory, and are only observed during the formation of the ulcer, disappearing gradually along with it. It is thus easy to judge from the observations accompanying this study that the lesion is absolutely benign and ephemeral, developing almost of itself in the space of a few days like a true acute affection. Although recurrence may be possible it is not the rule, for we have only once had occasion to note such a return, and that was several months after the first attack, and upon the opposite tonsil.

What we have just said about these forms of ulceration would seem to enable us to dispense with further points of differential diagnosis, but they are still so little known, and have been so often confused under other designations, that we cannot avoid stating the points of diagnosis from tonsillar chancre and from ulcerated gummata for this reason. I can find no parallel between these losses of substance and acute tuberculosis of the tonsil, for these two lesions have no resemblance between them. I have seen nothing in my practice, and found nothing in published works upon these different subjects, particularly in the thesis of Barth,² which resembles, even distantly, the affection with which we are at present occupied. Lupus ulceration (chronic tuberculosis) presents in some cases a certain resemblance to the lesion which we are describing, but, beyond the fact that lupus does not confine itself to a limited point in the tonsillar tissue, and that its borders are always more or less red and infiltrated, the contours of the loss of substance are less clear, and this latter is covered with pinkish granulations, which gradually die away at the margins. The course is slow and insidious, and in successive exacerbations, and the duration is always rather long—sometimes even several months. In addition, *primary and isolated* lupus of the tonsil is rather rare, if we consider the few facts about it which have been published. At the present moment I have such a case under observation, which is to be published by one of my pupils in his inaugural work along with several unpublished cases of ulcerative lacunar tonsillitis.

In the same way I eliminate at once the idea of cancrroid or other malignant tumour of the tonsil, whose macroscopic character, and, above all, its mode of development, can be in nowise compared with those of this acute ulcer.

Tonsillitis, membranous or herpetic, and, in a word, inflammatory acute angina, have characters too well marked to allow the least confusion with this simply local lesion, of which we here give several examples.

Tonsillar chancre itself to which Prof. Fournier¹ and Dieulafoy² have recently called attention, and of which numerous examples may be found in the thesis of M. Pivandrau,³ only resembles the simple ulceration in a very slight degree; the signs of local affection are most marked, the tonsillar tissue is red and tumefied; the soft palate and the anterior pillar very often participate in the infectious process; the voice is thick; the submaxillary glands are exceedingly engorged with *all the appearances which characterize them in these cases*. On the other hand, the chancre of the tonsil lasts a long time, often for several weeks.

It is sufficient to have seen it once, in order never to think of confusing it with any other change in the same region, without mentioning the later development of other syphilitic symptoms which, in a doubtful case, would put the genuine label on the lesion.

I pass in silence the mucous patches which often in smokers are more diffuse, more superficial, more permanent, and more tenacious than the lesion observed in our patient.

Ulcerated gummata are, perhaps, of all the tonsillar diseases, those which may have most resemblance to the disease which is now occupying us, and it was to them that I turned my thoughts formerly, when I knew the nature of these transitory ulcerations imperfectly, or even not at all. The ulcerative gumma presents itself in fact in the form of loss of substance, punched out, and with a yellowish coating, like the core of a boil, under which there is a bleeding, reddish, fungating, granulating surface, but the characteristic of the gummatus ulcer is that it does not limit itself to the centre of the tonsillar tissue; but, on the contrary, it originates, in general, at its margin, either in front or at the back, below or above, in such a manner as to invade, with great rapidity, either of the pillars, the soft palate, the pharynx, or the base of the tongue, so as to spread both in width and in depth.⁴

Tertiary syphilis of the back of the throat when left to itself, extends in width and in depth, so as to produce an enormous destruction of tissues, which leave behind them the cicatricial synechiæ, which are so well known. The borders of the syphilitic ulcer are always more or less red, inflamed, and infiltrated, which is never the case in simple ulcers.

These are, then, in my opinion, the distinctive well-marked characters, to which we may further add the slower course. Consequently, the increased duration of a gumma, without mentioning its irregular form, and sometimes the previous history of the patient may enable us to

¹ "Bulletin Medical," 1893.

² "Sem. Medical," 1893.

³ Thèse de Paris, 1884.

⁴ See Dr. Natier's work on Gummata of the Tonsils (*loc. cit.*, Nos. 3 and 4).

decide absolutely on the cause of the affection. The age of the patient is also a diagnostic element to be taken into consideration. Gummatous ulcer is frequent after thirty years of age ; that of lacunar tonsillitis is more often found between eighteen and twenty-five.

Lastly, this latter has an onset like that of an ordinary angina from cold ; but the gumma, on the other hand, comes on insidiously and more slowly.

(To be concluded in our next.)

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**ALARMING HÆMORRHAGE following the OPENING of the
ANTRUM of HIGHMORE through the
ALVEOLAR PROCESS.**

By W. SCHEPPEGRELL, A.M., M.D. (New Orleans, U.S.A.).

Assistant Surgeon Eye, Ear, Nose, and Throat Hospital, &c.

THE care with which the nose and its accessory cavities have been examined during the last decade has demonstrated the fact that empyema of the antrum of Highmore is by no means a rare disease.

In empyema of the maxillary sinus the thorough cleansing and disinfection of the cavity is the first indication. This may be effected in a number of ways, the method adopted by most rhinologists being the drilling of an opening through the alveolar process, as first practised by Cooper, and syringing and treating the cavity through this opening.

In most cases the drilling through the alveolar process is attended by but little hæmorrhage, which can be easily controlled. In twenty-eight cases, of which I have notes, in which I performed this operation, either in private practice or at the clinic of the Eye, Ear, Nose and Throat Hospital, I have had not more than slight hæmorrhage in every case but one, and this case is so unusual that I will describe it here.

In referring to this operation, as described in the various special works, as of Bosworth (1), Lennox Browne (2), Ingalls (3), Moritz Schmidt (4), Schech (5), McBride (6), Spencer Watson (7), Rosenthal (8), Zarniko (9), and others, absolutely no mention is made as to the possibility of hæmorrhage. Bryan, in "Burnett's System of Diseases of the Ear, Nose, and Throat," refers to the troublesome hæmorrhage sometimes following the Mikulicz method of opening the antrum through the inferior meatus ;

but no reference is made to any hæmorrhage following Cooper's method of opening the antrum through the alveolar process, nor can I find any mention of this complication in the comprehensive references in Semon's "Centralblatt für Laryngologie" (1885 to 1895). The rarity of this occurrence is therefore evident, and will give especial interest to the following case.

Miss M. S., aged thirty-three, consulted me for a "neuralgic pain" about the right eye, and a fœtid discharge from the right nostril. The pain and discharge had existed for over three years. The family history is good. Her general health has been excellent except during the last six months, when she has suffered from loss of appetite and occasional slight fevers, which she associates with the pain in the head. About eight years ago she had a severe epistaxis, but has had several teeth extracted without more than the usual hæmorrhage, and a cut finger heals promptly.

A rhinoscopic examination shows several polypi in the region of the middle turbinal, and pus in the middle meatus. Electric transillumination shows infra-orbital darkness, and a diagnosis of empyema of the right antrum of Highmore is confirmed by washing out the cavity through the ostium maxillare, and bringing away a quantity of fœtid secretion.

On Friday, February 9th, 1894, the antrum was drilled through the alveolar process, at the site of the first molar, which, with the adjoining teeth, had already been extracted for the "neuralgia." The operation was performed with a small Curtis trephine operated by an electro-motor, the opening into the cavity being made without difficulty. Local anæsthesia was induced by injecting ten minims of a three per cent. solution of cocaine into the gum.

There was such a profuse hæmorrhage that the cavity was rapidly washed out with a boric acid solution, and packed with iodoform gauze.

Saturday, February 10th. On removing the iodoform gauze packing there was such a free hæmorrhage that the opening in the alveolar process was quickly packed as far as the inner wall of the antrum. The hæmorrhage appeared to be arrested, but in about two minutes the blood began to flow from the right nostril, showing that the hæmorrhage had continued through the sinus. The gauze was at once removed, and the whole antral cavity packed firmly with the gauze as far as the external opening in the alveolus.

The patient was very weak from the loss of blood, and had to be placed in the horizontal position, and stimulants freely administered. There were two more attacks of weakness during the afternoon.

Monday, February 12th. The removal of the gauze was again followed by a severe hæmorrhage, which was controlled by packing as before. In spite of the rapidity with which the antrum was packed, there was considerable loss of blood, and the weakness, consequent upon the recurrent severe hæmorrhages, confined the patient to bed until the following Friday.

Friday, February 16th. Another hæmorrhage followed the removal of the gauze. An attempt was made to pass a galvano-cautery into the alveolar opening to cauterize the bleeding part, but the hæmorrhage was

so profuse that this was ineffectual, and the cavity had to be repacked with all possible dispatch.

Monday, February 19th. I examined the parts carefully, but made no attempt to remove the gauze, as the patient seemed very weak.

Friday, February 23rd. Although two weeks after the operation, the opening bled freely on removal of the packing. The hæmorrhage was controlled by filling the cavity with iodoform as before.

The persistency with which these alarming hæmorrhages occurred on each attempt to remove the gauze determined me to make an effort to close the alveolar opening, and continue the treatment of the antrum by some other method.

Saturday, February 24th. About one-third of the gauze was removed without bleeding.

Monday, February 26th. The remainder of the gauze was removed, and was followed by a hæmorrhage which necessitated the packing of the cavity.

Thursday, March 1st. The packing was removed with the same result.

Friday, March 2nd. About one-half of the gauze was removed without causing a hæmorrhage.

Saturday, March 3rd. The remainder of the packing was removed, and was followed by a hæmorrhage as free as on previous occasions. The drilled opening in the alveolar process was firmly packed through its whole length, but the antrum at once filled, and discharged the blood through the nostril. The gauze was removed, and the whole cavity was packed, which at once controlled the hæmorrhage. The patient was much prostrated from the loss of blood.

I was now becoming quite anxious over the case. The gauze, saturated with blood, could not be left in the antrum more than twenty-four to forty-eight hours without setting up symptoms of septic absorption, and each attempt to remove the gauze was followed by a serious hæmorrhage.

Monday, March 5th. One-third of the packing was removed. There was no hæmorrhage, but the patient reported that the nose had bled for fifteen minutes during the afternoon.

Tuesday, March 6th. Another third of the gauze was removed without loss of blood. The nose again bled for about five minutes during the evening.

Wednesday, March 7th. The remainder of the gauze was removed without hæmorrhage. Only a small piece of gauze was placed in the outer end of the alveolar opening to protect it from particles of food, etc. This the patient was directed to change occasionally.

Thursday, March 8th. There were several slight discharges of blood from the nose.

After this date there was no further hæmorrhage. The patient had been much prostrated by the repeated hæmorrhages, and was placed on a rich diet, especially of milk, with tonics and iron. A week later, as there had been no further signs of hæmorrhage, she was sent to the country, returning in three weeks much improved. The artificial opening in the alveolar process has apparently closed.

The treatment was then continued through the nostril. The polypi

were removed with but little hæmorrhage, and the antrum washed out through the ostium maxillare. This was kept up with increasing intervals for about four months, when the patient was discharged, as no more pus had been washed from the antrum for several weeks. A year later there had been no recurrence.

As there appears to have been no hæmophilic tendency in the patient, the severe hæmorrhage recurring on each attempt to remove the gauze for almost one month after the operation was certainly remarkable. That there was no tendency to hæmophilia was shown, not only by the previous and subsequent history, but also by the fact that the removal of the polypi and other intra-nasal operations were not followed by any unusual bleeding. A large blood-vessel in the alveolar process might explain the initial hæmorrhage, but scarcely the repeated recurrences. A hæmorrhage from this cause would probably also have been controlled by the firm packing which was made through the whole extent of the alveolar opening.

My only explanation is that there must have been an angiomatous condition of the mucous membrane of the antrum at the point where the trephine entered the sinus. This would explain why the bleeding continued through the sinus and nostril after the opening in the alveolar process had been firmly packed. The disturbance due to the removal of the packing would account for the recurrence of the hæmorrhage.

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 - (4) MORITZ SCHMIDT, "Die Krankheiten der oberen Luftwege," Berlin, 1894.
 - (5) SCHECH, "Die Krankheiten der Mundhöhle, des Rachens und der Nase," Vienna, 1892.
 - (6) MCBRIDE, "Diseases of the Nose and Ear," London, 1892.
 - (7) SPENCER WATSON, "Diseases of the Nose and Accessory Cavities," London, 1890.
 - (8) ROSENTHAL, "Die Erkrankungen der Nase, deren Nebenhöhlen, und des Nasenrachenraumes," Berlin, 1892.
 - (9) ZARNIKO, "Die Krankheiten der Nase," Berlin, 1894.
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ON ATYPICAL CASES.

IF a long series of cases be taken at random in any department of medical science, a certain number will fail to satisfy the requirements which would place them under the rubrics, or, in other words, in the diagnostic "pigeon-holes" at our disposal. In moments of clinical languor we are apt to classify them along with the types to which they most nearly approximate; at other times they are placed among the unknowable or "undiagnosed," and in any case are recognized as "atypical." The attitude of mind in which we ought to regard them

is that of careful observance and patient analysis. By keeping the details well in our memory—instead of trying to forget them—we in time find out their position in our noso-taxic scheme, either in the light of our own later experience or of that of others.

These remarks are certainly true of the specialties to which this Journal is devoted, and are well exemplified by the descriptions of certain morbid conditions of the nose which up till comparatively recent times have not been clearly distinguished. Thus, certain cases registered as purulent rhinitis or *ozæna*, but of “atypical” forms, are now recognized at once as examples of disease of the nasal sinuses. Again, most of us have been sorely puzzled at times by the occasional occurrence of comparatively marked ulceration of the tonsils, the nature of which we have been apt to consider as syphilitic, but “atypical” in many respects, and especially in regard to the extreme rapidity with which they heal. It has fallen to the lot of Dr. Moure, of Bordeaux, to see a number of such cases and to satisfy himself of their non-specific nature. He recently read a paper on the subject before the Société Française de Laryngologie, etc., which we have the privilege of placing before our readers in this Journal.

Of similar interest are the “thirty-seven cases of serous disease of the maxillary sinus” detailed by Dr. Noltenius, of Bremen (“*Monatschrift für Ohrenheilkunde*,” April, 1895), in which the symptoms were usually those of hypertrophic rhinitis, but “atypical,” inasmuch as the cause of the subjective obstruction was not obvious on inspection, nor until exploratory aspiration of the antrum was carried out. This was accomplished by means of a needle and syringe through the inferior meatus, a variable amount of serous fluid being withdrawn. Simple puncture and removal of the fluid by means of a modification of Krause’s trocar, also introduced through the outer wall of the inferior meatus, was in all cases sufficient to effect a cure without any irrigation or further treatment whatever. Many of us must be able to look back to cases presenting similar “atypical” characteristics, which a study of this communication may help to clear up.

Dundas Grant.

ABSTRACT of a LECTURE upon the relation between the MOVEMENTS of the EYES and the MOVEMENTS of the HEAD.

By A. CRUM BROWN, M.D., F.R.S.

HAVING experimentally demonstrated that our sensation of “the fixity of the earth” is associated with certain intermittent unconsciously executed compensatory movements of the eyeballs, the author proceeded to consider the probable cause or mechanism through three sources of information, viz. :—(1) from personal experiments, (2) anatomical observations and measurements, and (3) from observations of the effects of injuries to the labyrinth.

He demonstrated the first group by means of a smoothly revolving table made for lighthouse purposes, which, from its accurate adjustment, could be driven at uniform speeds, thereby excluding any sensations due to inertia of the soft parts of the body. The patient being seated in an upright position, with eyelids closed, the author observed that, on rotating the table at a moderate speed, the eyeballs executed regular jerky movements, and were attended by sensations of rotation; but both movements and sensations ceased after a few revolutions, only to return on stopping or slowing the table, or altering the axis of rotation of the head. These phenomena he further illustrated with the well-known trick of walking several times round a poker held vertically, the forehead resting on the knob, and then attempting to walk erect.

This information he interpreted as substantial evidence of the localization of a special mechanism in the head. Of the view that the semicircular canals (as originally advanced by Flourens) were the responsible organ he sought confirmation in a consideration of their physical arrangement, and their relation to the several planes he investigated by a specially constructed goniometer. He concluded that the *stretching* of the membranous ampulla was the real cause of the sensation of rotation, through excitation of the cristæ acusticæ, for when either canal was rotated in a direction *following* the ampulla, the pressure in the endolymph of the ampulla was increased, but in the peri-lymph was decreased. Cessation or a reversal of the rotation caused reverse pressures and corresponding changes in sensations, for relaxation of ampullary walls and diminution of endo-lymph pressure did not stimulate the cristæ. This hydro-kinetic theory was first advanced by Mach of Prague and Breuer of Vienna. Although Cyon, by plugging, caused an increase of pressure in the bony canals, without any nystagmus or rotatory movements of the head, this did not negative, but supported the author's views that an *increase* of intra-membranous pressure was essential to the creation of the foregoing phenomena.

The author did not agree with the view that the semicircular canals were concerned in appreciating the direction of sound.

He further aptly compared the ampullary organs with clerks in a merchant's office, of whose usefulness we were only aware when they ceased to work properly.

The intimate correlation between the ocular movements and the ampullary organs was strongly supported by the fact that a large proportion of deaf-mutes were strangers to the sensation of rotation, and exhibited no jerking movements of the eyeball when rotated; the want of these organs being supplied by a greater activity and increased acuteness of other sense organs—it being a matter of pathological observation that, in the subjects of deaf-mutism, the semicircular canals were frequently absent.

(Wyatt Wingrave) Dundas Grant.

THE BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.

SEVENTH ANNUAL SUMMER MEETING.

July 25th and 26th, 1895.

PRESIDENT'S ADDRESS.

Gentlemen,—It is my first and most pleasing privilege to greet, with warmest welcome—on behalf of the Fellows of the Association—our honoured guests.

To the Fellows of the American Laryngological Association, who, as delegates from that eminent, and I would add pioneer Society, have crossed the ocean to join in our meeting ; to our distinguished colleagues from the Continent ; and to all who, in response to our invitation, have graciously accepted to take part in our discussions, I desire to express our heartfelt appreciation of the distinction they confer upon us.

We are indebted to one and all for the great pleasure they accord to us by their presence at this our seventh summer meeting.

Of all the annual gatherings of the British Medical Association, the one held in Dublin, eight years ago, will, I am sure, be specially remembered by many, as there, for the first time, among the different sections, a separate place was assigned to our department ; and that the sub-section then established gave origin to the British Laryngological Association.

The founding of this society was the first opportunity afforded us in this country of frequent and more special conference together, that each might benefit by the experience of his fellows ; that open and unprejudiced discussion might test the worth of many theories ; and that each might thus have readier means of adding still more to the important work—already then on record.

Above all, it was the firm foundation of that friendly intercourse, that bond of union and good fellowship, which, advancing our common aim, is now one of the greatest sources of enjoyment to us in our conferences.

I hope that no spirit of egotism may be attributed to me if, in my gratification at the result obtained, I speak of the pleasure I feel that it fell to my lot to give utterance, in my address in Dublin, to the wish I felt that this measure be no longer delayed. The ready response that the proposal met with did away with all doubt as to the views of the majority. The full realization of the hope then expressed is to-day a just source of pride to those of the original members to whom the furtherance of the undertaking was entrusted ; and to all who, by the work they have done, have promoted its success.

Dr. Hayes, the secretary of the section, Dr. Stoker, and Mr. Lennox Browne, with whom, as chairman, I was associated, formed the com-

mittee appointed by the meeting to carry out the preliminary work of organization ; and to this number were added Dr. Macintyre and Dr. Hunter Mackenzie. The work involved was not light, and upon Dr. Hayes especially the burden of much correspondence was heavily laid. The result to us, though, was most gratifying when, at the preliminary meeting held the following spring in London, at the rooms of the Medical Society—which meeting was convened to receive the report of the Dublin committee—the hon. secretary, Dr. Hayes, returned a list of over fifty applicants for membership, in answer to the circular that had been issued to all who were interested in the diseases that are our special study. This list included the names of almost all those prominent in our specialty at that time.

On this occasion—at which I had the honour to preside—there were present, among many others : Dr. Hunter Mackenzie, of Edinburgh ; Dr. Macintyre, of Glasgow ; Dr. Prosser James ; Mr. Lennox Browne ; Mr. Cresswell Baber ; Dr. Whipham ; Dr. Woakes ; Dr. Dundas Grant ; Dr. Orwin ; Dr. Greville Macdonald ; and Dr. Stoker ; and the resolution there brought forward, “That the British Laryngological and Rhinological Association be now declared established,” was unanimously carried.

Among the first to place his name on the roll of original members was Sir Morell Mackenzie, the first President of the Association.

In his inaugural address—most brilliant in argument, most perfect in diction—he welcomed the establishment of the society as marking a distinct epoch in the progress of our specialty ; and, rebutting futile theories that had been advanced opposing its foundation, bade God-speed to the work.

I must not encroach upon the time at our disposal now, by alluding in detail to the work done since then. In looking, though, to the list of papers that have been read at the several meetings, and the many interesting cases that we have had the privilege of observing, one cannot help being impressed by the comprehensiveness of the field that has been traversed, and the importance of the discussions to which they have given rise.

It happens that our July meeting this year brings us again in close relation with the British Medical Association, about to hold its session in London ; and it is surely a fitting moment to recall the bright cheer we met with at that meeting in Ireland, when, in the halls of Trinity College and under the auspices of the British Medical Association, this, the original Laryngological Society of England, was inaugurated.

The harmony of work between the two since then, the never-flagging interest that has been maintained in the special section of the British Medical Association, the contributions of the Fellows of this society to each of those annual meetings, and the sustained interest of the work there done, is proof that the fears expressed by some at the beginning, that the work of the one would hinder that of the other, were groundless ; while the records of our meetings here bear evidence, I think, of the wisdom of the undertaking, and the good thereby achieved.

When all work together, availing themselves of every opportunity

afforded, no harm can befall the work. Of this we have additional evidence since the establishment of the more recent special body, the Laryngological Society of London. In this vast Metropolis alone there may be room for more than one centre of observation, and we do not seek to contest the benefits to be derived from all.

Yet we cherish the British Laryngological Association with special affection. If we love not Cæsar less but Rome more, still no spirit of contentious rivalry with our fellows can be set down to us.

In face of the work before us, I must, though, detain you no longer.

To the Fellows of the Association I would say only these few more words: If, when I last addressed you on taking the presidential chair, I found it difficult to express in adequate terms all that I felt in recognition of the high honour you had bestowed upon me, now that my term of office is drawing to a close I find myself still more sorely in need of words to tender, as fully as I would wish to do, my deep gratitude to all for their ever-ready support. To you I owe all thanks for your valuable co-operation, and your important contributions during the past year.

To those who have borne office with me, the vice-presidents and members of the Council; to the hon. secretaries, Dr. Pegler and Mr. Lake, I am personally most deeply indebted. I cannot thank my colleagues sufficiently for their untiring devotion to the work they have been called upon to meet during my term of office, and for the great benefit I have derived from their advice.

The little that I may have been enabled to do to maintain the standard of my predecessors I owe to the kind aid I have received from all.

DISCUSSION ON THE SURGICAL TREATMENT OF THE ACCESSORY CAVITIES OF THE NOSE.

Dr. JOHN N. MACKENZIE (Baltimore). Mr. President and Gentlemen,—When some months ago I received from the President and Council of your honourable body the courteous invitation to open this debate, it did not occur to me at the time that I had little, if indeed anything, novel to add to the already rich and voluminous literature on the subject. Rich, however, as this literature is, and often as the subject has been dragged into debate, there are still points which remain unsettled—questions which are still unanswered, and which come within the pale of reasonable controversy. It is to a few of these points that I wish to direct attention this morning, and I will preface what I have to say by the observation that I do not propose to bring under consideration anything very startlingly original or novel, but I simply wish to precipitate and stimulate debate. On looking over the slips which your honorary secretary has kindly prepared, I find that the distinguished gentlemen who are to follow me will occupy their time chiefly with the frontal and ethmoidal sinuses, and in order to avoid unnecessary repetition, and in order not to prolong the discussion beyond reasonable limits, I shall confine my remarks to the surgical treatment of the diseased antrum maxillare, the most generally interesting of all the nasal accessory cavities.

The chief interest in the surgery of the antrum, as, of course, in the case of the other sinuses, is the manner of reaching its interior, and discussion of this question involves inquiry into the most convenient and satisfactory avenues by which to approach the sinuses from without. There are two avenues of approach to the maxillary sinus—the nasal passages and the mouth; and as considerable diversity of opinion still exists as to the choice of point of entrance, it may be well to review very briefly the chief openings which are employed in this class of case at the present day.

At the outset the question seems perfectly natural, Why not enter through the aperture which nature has already provided—the ostium maxillare—with or without enlargement of its normal size? While in some cases such a procedure is not difficult of attainment, in many others—and these constitute the vast majority—the foramen is inaccessible, or, if accessible, its entrance is effected only with considerable pain, and with possible injury to the floor of the orbit. Not infrequently, too, the natural orifice is abnormally situated, and great harm may be done by incautious attempts at penetration.

In cases in which the naso-antral opening is not readily accessible it has been proposed to remove the entire middle turbinated body, or its anterior portion. This operation, in my judgment, would only be justifiable in cases in which there was associated disease of the ethmoid, and here, too, it would be chiefly useful as a means of reaching the cells of that bone. In simple uncomplicated antral disease it is preposterous.

When, then, in addition to the inaccessibility of the naso-antral openings, the discomfort to the patient—not only in the penetration of the sinus, but also in the subsequent syringing—is taken into consideration, I think we may lay it down as a safe rule of practice that this operation should only be undertaken when other methods are contra-indicated, or in cases in which, from extensive loss from disease or congenital absence of portions of the intra-nasal framework, this opening is readily accessible.

The method of opening the maxillary sinus through the inferior meatus owes its popularity to the advocacy of Mickulicz, who opens the cavity below the ostium maxillare and close to the floor of the inferior meatus. The same objection of inaccessibility of the point of puncture obtains here as in the case of penetration through the normal opening. The antral wall is sometimes very dense at this point, causing difficulty of penetration and great pain, and, as the nasal wall at this situation is very vascular, the operation is not infrequently attended by severe hæmorrhage.

A decided improvement on the operation of Mickulicz has been brought forward by my distinguished friend Dr. Krause, of Berlin. In his method, as I understand it, there is not only one operation, but, after several punctures, it has to be reopened at several sittings, and the patient cannot clean out the cavity. These objections seem to me to have been recently overcome to a large extent by Dr. Walter J. Freeman, of Philadelphia. He, like Krause and Mickulicz, enters the antrum close to its floor, but more anteriorly, just below the nasal duct. The antrum

is very thin at this point, and the instrument goes through very readily, and, by means of an appliance which I shall show later on, the patient can easily syringe the cavity out. This instrument consists of an ordinary trocar and canula; the trocar is much longer than the canula, in order to facilitate removal of the latter. The instrument is introduced low down in the inferior meatus anteriorly at a point below the nasal duct, as near as possible to the vestibule of the nose, and, with a few taps of the mallet it readily penetrates the sinus. The trocar is then withdrawn, and it is seen whether pus or any other fluid follows the puncture. After having determined the presence or absence of pus—assuming that pus be present—the canula is re-introduced, the nuts are screwed off, and the instrument left *in situ*. The cavity can be syringed out either by means of a second tube, which fits exactly into the primary tube, with a small rubber syringe, or, what is better, a small rubber tube, which accurately fits into the canula, can be attached and syringed out by the surgeon or the patient himself.

I think this method possesses many advantages over any other previously described. Dr. Freeman has had excellent results with it.

The leading objections to intra-nasal operation are, first, the frequent inaccessibility of the point of puncture. This is true not only of the middle but of the inferior meatus. When, for example, the inferior turbinated bone is “depressed,” and especially in a narrow nostril, there is little, and sometimes no room beneath the bone in which to manipulate the instruments. Preliminary removal of the inferior turbinated body would scarcely be justified in the presence of other and easier methods of procedure. In the second place, except in the case of Freeman’s method, the patients are unable to attend personally to the cleansing of the cavity—a very decided objection. In the third place, the sphere of usefulness of these operations is limited. They are excluded in the case of growths and foreign bodies, and in that large class of old suppurative catarrhs, that have to be dealt with in a thoroughgoing, vigorous manner, and of which I shall speak later on. In the fourth place, the pain attending the operation and the subsequent syringing is greater than that experienced in some of the mouth operations which easily take its place. In the fifth place, it may happen that after having performed the intra-nasal operation conditions may be found that necessitate a second and more radical operation through the mouth, thus subjecting the patient to two operations. This is by no means a fanciful objection. In the sixth place, I do not believe that as good drainage, or rather cleansing, can be secured by any of the intra-nasal methods as in the case of the mouth operations. Even when the antrum is entered near the floor, there is always some running pus after syringing, as is admitted by Freeman, who on that account cautions against the use of hydrogen dioxide on the ground that the pressure from the liberated oxygen, except with a very weak solution, gives rise to pain.

I do not by any means wish to depreciate the value of intra-nasal surgery in this class of case. It is often invaluable, especially as an aid to diagnosis. It may also be useful in cases in which the antrum maxillare is absent or occluded.

In the mouth, on the other hand, we have a larger field of operation and a far greater choice of points of puncture. The antrum may be entered through almost any point along the alveolus, either through or between the teeth, or above the teeth, or, in the case of growths, through the canine fossa. The surgeon must be guided in his selection of the site of operation or preliminary exploration by the circumstances of the case. The presence, for example, of a carious tooth would call for the alveolar operation, while in the case of sound teeth the antrum could be entered at some point above them.

Except there be some decided contra-indication, I prefer the alveolar operation. By it we are better able to drain, cleanse and keep clean the antral cavity; the operation is more easily performed, and the hæmorrhage is much less than in the intra-nasal methods; the patient can attend personally to the cleansing of the cavity, and, if it be necessary to resort to vigorous measures, such as curetting the antral cavity, the opening can be easily enlarged for this purpose.

Even when not manifestly diseased the same result may be accomplished, for it sometimes happens that the seat of the trouble is at the root without physical sign of its existence.

If the tooth be manifestly diseased, it goes without saying that by the alveolar operation we kill two birds with one stone. Contrary to the teachings of Zuckerkandl and the German school in general, I believe that inflammation of the antrum is more often the result of dental and periodontal disease than of intra-nasal origin.

The dental origin of the trouble may be and is overlooked when the offending body is a carious, suppurating pulp or fungi, with the visible portion of the tooth in a state of apparent health. In such a case the futility of intra-nasal operation is obvious.

The objections urged against this alveolar method are (1) that it frequently involves the sacrifice of a sound tooth; (2) that there is danger from entrance of food into the antrum; (3) that septic infections may occur from the mouth, and (4) that the constant drain of pus into the mouth for months and years impairs digestion and the general health.

In regard to the first objection, it is only in exceptional cases, and especially in those in which radical methods of dealing with the antrum are to be undertaken, that we would sacrifice an apparently sound tooth. Few would hesitate between the loss of a tooth, even though sound, and the loss of the middle turbinated body or the establishment of a large opening in the outer nasal wall—a condition which would become necessary in order to thoroughly eradicate the disease by the intra-nasal method.

The second objection is largely fanciful. The canula or other device used to keep the alveolar wound open may be suitably plugged or closed by other devices during eating, if necessary, and foreign substances thereby excluded. But, as a matter of fact, such accidents are not common. To get there the food has to travel a long distance, for it should not be forgotten that the cavity is high above the lower margin of the teeth. I have known patients to wear an open antral canula for years without the entrance of food into the antrum. What if a particle of food should get in?

As far as the third objection is concerned, infection is liable to occur through any open wound, whether the mouth or nostril; but while the former is the lurking-place of many a congregation of well-known and nondescript disease-producers, the latter can hold its own successfully against it as the abiding place of thousands of infective agencies.

The consideration of the fourth objection brings me to a question of great practical importance. As a matter of actual clinical fact there is very little discharge from the alveolar opening, and sometimes none at all. It has to be washed out. But, assuming that a profuse and continuous discharge into the mouth follows the alveolar operation, should that contra-indicate the procedure? On the contrary, it is a positive indication (I am speaking of chronic cases) that the cavity should be entered by this very method, its interior as thoroughly as possible scraped out, and the discharge arrested. We do not allow cavities elsewhere in the body to go on suppurating for ever. The contemplation of the first principles of surgery should teach the veriest tyro that no exception should be made in the case of the antrum. It should simply be treated as any other suppurating cavity in the body—cleaned out, packed, and allowed to fill up by granulation.

The operation to be selected will depend upon the nature of the disease. No one method of procedure is applicable to every class of case.

In acute abscess and empyema, or in cases in which the antrum is only the receptacle for pus and not the pus-producing agent, it may be simply sufficient to resort to one of the minor operations, such as, for example, puncture above the teeth or through the anterior lateral wall in the nasal fossa. But in more chronic cases, and especially when the suppuration process is complicated by a villous or fibroid degeneration of the membrane of the sinus, the latter should be freely opened by one of the more radical methods, such as the alveolar with larger opening, or the operation through the canine fossa, its interior thoroughly scraped out and allowed to fill up with granulation tissue. It is supreme folly to trifle with such cases. To treat them by simple injections is worse than pouring water on a rock.

It goes without saying that in the case of growths or foreign bodies, the cavity should be freely opened.

After-treatment.—In the after-treatment, strong antiseptic solutions should be used with great caution. Even when fœtor exists we should not simply seek to stifle it, but to remove its cause. They increase the flow of serum and tend to keep up rather than arrest the suppurative process. Halstead has demonstrated under the microscope that a distinct line of superficial necrosis follows the irrigation of fresh wounds with even so dilute a solution of bichloride of mercury as 1 : 10,000. Antiseptics are more necessary outside than inside the antrum. Strong chemical disinfectants should also be studiously avoided. Mild treatment must be the rule.

Without enumerating the various solutions that may be employed, I may simply say that about as clean and useful an agent as any other is the permanganate of potassium in the strength of 1 : 1000. The cavity should be flushed out thoroughly, at first daily—in bad cases twice

daily—with this solution, and, when it is as clean as possible, it should be syringed with some mild wash, such as Thompson's fluid. The after-treatment, then, may be summed up in one word—*cleanliness*. Keep the antrum as sterile and aseptic as possible. Many persistent chronic catarrhs of this cavity are due to neglect on the part of the surgeon of that physical attribute which we learn from good authority is next to godliness. Many are doubtless made chronic from the start by infection from unclean instruments, and then extreme chronicity may be largely due to the surgeon more than to original disease.

In packing the sinus I much prefer, especially in private practice, bismuth, or even simple sterilized gauze to the iodoform gauze usually recommended. Bismuth is for the same reason preferable to iodoform for insufflation.

There are many other points which I might take up, but as the hour is late I will simply ask attention to the following :—

I. *Importance of preliminary bacteriological examination of any existing discharge from the sinuses.*—The scientific clinical accuracy of the present day demands that all structural lesions and their products be submitted to a microscopic test. This mandate has been sadly neglected in the case of the nasal and accessory cavities, and especially in that class of nasal discharge in which pus is the chief and most conspicuous element. In order to interpret rationally the full meaning of such a discharge (condition), ocular inspection and physical exploration of the local lesion are in themselves insufficient guides to scientific operative procedure. Without bacteriological aid we are dealing, in such cases, very largely with an unknown quantity—we are not doing ourselves or our patients full and complete justice. It seems scarcely necessary at this day to elaborate such a self-evident proposition, and yet there are those who condemn such examination as unnecessary or even useless. By bacteriological examination we determine not only the nature of the infection, but we foreshadow often the possible necessity for operation, and the probable ultimate termination of the disease. I am confident that many cases of nasal discharge have become inveterate and incurable by failure at the outset to determine its true nature with the microscope.

II. *Necessity of aseptic surgical technique in operations on the accessory sinuses.*—The importance of this subject ought to be evident to intuition. So far as I am aware this class of operations is usually done without antiseptic or aseptic precautions. When we consider the anatomy of the regions involved ; how the myriad cells of the ethmoid and middle turbinated bone (which is really a part of the ethmoid) offer safe asylum for bacteria of all sorts, and become dépôts of septic infection ; how readily the antrum may be infected through the nose ; and when we take into consideration the overwhelming importance of keeping the sinuses, after operation, as far as possible, surgically clean, the necessity of carrying out all operations upon them under modern surgical precautions should obtrude itself upon the recognition of even the most careless observer.

It is, of course, impossible to sterilize thoroughly the accessory cavities,

but we should do the best we can. I wish to-day to plead for more thorough preliminary examination in this class of case, and for more careful surgical technique. The details may seem useless and endless, and the trouble incident to their performance may not seem justified by the excellent experience of the past ; but it pays.

It may be contended as the rich records of bygone years have shown, that as these operations may be carried out with perfect safety without the surgical precautions of the present day, that, therefore, asepsis is unnecessary and impracticable. Such logic carried to its legitimate end would stop the march of human progress.

It is not true that operations on the accessory sinuses may be carried out without danger in utter disregard of modern aseptic technique. There are cases, not all recorded perhaps, in which death has followed their performance under the old rule of no asepsis at all.

Preliminary bacteriological examination and subsequent aseptic surgical technique enable us then (1) to grasp the case in its entirety, and to foreshadow the result of treatment, (2) to reduce the danger of operations on the sinuses in skilful hands to *nil*, (3) to materially lessen the discharge and accelerate the process of repair.

Dr. F. H. BOSWORTH (New York): Mr. President and Gentlemen,—I have very few words to say on this subject. It seems to me that, when we come to discuss the question of the accessory sinuses, we have in the antrum, in the sphenoidal sinus and in the ethmoidal to deal simply with retained pus. The clinical indications are very clear ; open the cavity, drain out the pus, thoroughly disinfect, and all the clinical indications are carried out. Furthermore, the symptom to which empyema of the sinuses gives rise is simply one of ordinary retained pus or oozing of pus into the nasal cavity. In the ethmoid cells we have to deal with entirely different conditions, and what I have to say to you will have to do mainly with them. To my mind their diseased conditions are by far the most interesting of all the so-called accessory cavities of the nose. In the ethmoid cells we have to deal with a kind of honey-comb bone, a mass composed of a large number of cells, each of which constitutes a small cold abscess, and which from a surgical point of view has to be treated. The interesting part of ethmoid disease, first, is in the symptoms to which it gives rise. Where there is intra-cellular pressure, or where the disease causes pressure on some of the motor centres, or base of the brain, the ethmoid disease may give rise to symptoms of a neurotic type, such as hay fever or paroxysmal sneezing. As another feature in regard to ethmoid disease, I believe that we have in it the active source of suppuration in other cavities. How suppuration gets into the antrum is easily explained. It is the natural drainage passing down towards the normal opening of the antrum. It may go into the sphenoidal sinus, although this I do not know. We know less about the sphenoidal sinus than recent literature would seem to indicate. The sphenoidal cells are to me practically unknown ground. I read with a certain amount of incredulity the literature on the subject of direct and very positive diagnoses made. Authors state that from *post-mortem* examination they find the sphenoidal sinuses have been

involved, but are these cases, which are spoken of so frequently as so easily cured, sphenoidal disease? Returning to ethmoidal disease, am I mistaken in my diagnosis? Is it by far the most frequent kind of disease which we meet with in the accessory sinuses, when out of two hundred cases there are but twenty-eight cases of antrum disease? Is this the proportion that you meet with? It is not the proportion that the literature of the last five years would warrant. I may be in error as to my diagnosis, or perhaps someone else makes the mistake.

As to the treatment of this disease, the surgical indications seem clear, if we carry them out, and open every one of the little cells and thoroughly disinfect them. We can get into the antrum with facility; the ethmoid cells are more difficult to enter. Can we go in with the galvano-cautery? It seems to me it involves great risk. Can we enter with a hard, stiff spoon into a long, irregular cavity? I cannot do it, and it does not strike me as an efficient instrument. The curette is not an efficient instrument in my hands. I know of one method that has been successful, and that is the burr. But it will be said that this is dangerous surgery. It seems to me a far more delicate instrument than the curette or the galvano-cautery. Used with the dental engine, its motion can easily be arrested. Removal is first made of the anterior portion of the anterior turbinated body, and then the cells entered with a burr three-sixteenths of an inch in diameter. Make, perhaps, a dozen turns, then feel with the burr until some hard, loose bone is found, which should be burred away. I have done this in about one hundred and fifty cases. Some of these were not ethmoids, but I have, probably, burred the ethmoid cells in over one hundred instances. We do not cure these cases speedily; it may require a long time. It is delicate work, in an exceedingly dangerous locality, close to the base of the brain and close to the orbit; but, with one exception, no accident has happened to me in all the cases I have operated upon. This case, that of a naval officer, was the result of what is called influenza. He had been seventeen years in Italy. Since then he had suffered with chronic suppurating discharge of pus from the nose. I burred out his ethmoid cells very thoroughly. He sat in a chair afterwards for a little while, and the first thing I heard was a sound as if he were blowing his nose. I turned round and saw that his eyes were starting out of his head. He had empyema of the orbit, which was most startling for the time, but disappeared in a few days. This was not caused by the burring, however.

This method seems to me to carry out all the clinical indications in these cases better than the curette, the spoon, the galvano-cautery, or any other appliance.

The following papers, already reported, were presented in this discussion:—

DR. BRYSON DELAVAN.—*The Surgical Treatment of Disease of the Ethmoid Cells.* (See JOURNAL OF LARYNGOLOGY, No. 8, Aug., 1895, p. 555.)

DR. LUC.—*Contribution to the Surgical Treatment of the Accessory Cavities of the Nose.* (See JOURNAL OF LARYNGOLOGY, No. 8, Aug., 1895, p. 558.)

Dr. E. J. MOURE.—*Clinical Considerations on the Treatment of Empyema of the Frontal Sinus.* (See JOURNAL OF LARYNGOLOGY, No. 8, Aug., 1895, p. 565.)

Dr. ZIEM (Dantzig) presented a paper, which was read by title, and will be subsequently printed in full in the JOURNAL OF LARYNGOLOGY.

Mr. LENNOX BROWNE: I rise, sir, as one of the original members of this Association, not for the purpose of entering greatly into the discussion, but to thank our distinguished visitors for the excellent communications which they have made, and I am sure all the Fellows here present will join with me in that expression. These communications—the first of several to be offered—would of themselves justify us in having gone a little out of our way to invite their presence, and we are very much rewarded by them.

The younger Fellows of this Association, Mr. President, have a great advantage over the older ones. I passed upwards of seven years in daily practice at the Golden Square Throat Hospital, and never saw a single case of maxillary empyema—much less one of ethmoidal, sphenoidal, or frontal—diagnosed; but, within a year of ceasing attendance at Golden Square, I had the opportunity of seeing four cases of the first-named class.

There are one or two points I noted in the various papers, on which I would lightly touch. With regard to Dr. John Mackenzie's interesting communication, although I am quite willing to admit that disease of the teeth is not by any means so uniform a cause of maxillary empyema as we formerly believed, it is, nevertheless, a very frequent cause, and, in the majority of cases there will be found a socket ready for the preliminary perforation, which, in the first instance, is preferable to an opening in the nose. Nor need we always begin by making a large opening in the canine fossa, but employ perforation of the socket as an exploratory measure, which will in all cases establish our diagnosis, and in not a few lead to a cure. If it does not, no harm has been done, and we can proceed to a more radical operation.

With regard to the operations in the canine fossa, I have learned from the results of the counter opening in the nose, which is a necessary part of this procedure, that we should have greater success by perforation of the socket, if we at the same time made a large nasal opening similar to that advised by Prof. Krause. For it is essential to establish free irrigation, and it is certainly a fact that in many cases the natural ostium maxillare is either too small for free irrigation, or is obstructed by some inflammatory swellings or granulations within the nostril.

As to the question of food getting into the antrum through any buccal opening, that is of course avoided by always having the canal plugged. I quite agree with Dr. Bosworth as to the inadvisability of making our irrigating solutions of a high strength of disinfectant, but I may remark that one of my patients cured herself by inadvertently using an undiluted solution of chloride of zinc, with the result of setting up inflammation, which led to a cure. I think Dr. Mackenzie, in regard to the maxillary antrum, has a little overlooked what we have learnt in recent years, namely, the fact that we have not only a simple abscess to deal with, but often an accompanying mass of fungosities and myxomatous tissue. Larger

openings must be made to thoroughly curette the cavity than can be obtained by socket perforation, just as much in the maxillary antrum as in the ethmoidal or sphenoidal sinuses, where they are the seats of pus.

Dr. Luc, in his admirable address, delivered with a delightful diction and choice of language, which even we Englishmen might envy, spoke of a case in which finding granulations in the nasal fossa, he removed them, but pus still secreted. He tapped the antrum with a good result. This is a very useful procedure, which I constantly practise. But Dr. Luc said that seeing the pus there he made up his mind that there was a frontal empyema. Why not an ethmoidal? I would like to ask him how, with any degree of certainty, he could diagnose a sphenoidal from an ethmoidal or frontal empyema simply by the objective evidences without regard to symptoms. My friend Bosworth, a few days ago, told me, when seeing a patient of mine, who had a polypoid mass in the nostril, that he was sure from this fact that the man had ethmoidal disease. But surely this does not constitute a distinction, the existence of polypi pointing rather to chronicity than to site. I have had one case in which I trephined the canine fossa, and on the disc when removed was a mass of myxomatous tissue, large as the top of my thumb. You may get granulations in any of these cavities. Quite rightly, as Dr. Luc says, in the acute ones you may get serum, muco-pus, or pus only, but in the chronic ones you are always likely to find also myxomatous granulations. I beg once more to tender my hearty thanks to our visitors for their communications.

Dr. W. H. DALY (Pittsburg, Pa.): I desire merely to say a word or two with reference to the seat of operation in diseases of the antrum. By putting the finger into the mouth one feels the prominence just above the first molar tooth, and you will find there a location, which I believe to be the most eligible for entering the antrum in all chronic cases. It is possible to have unlimited discussion on theories, but when we come to a practical consideration we should endeavour to get those methods which are simple and quickly carried out. The last few years the operations on the antrum that I have done have been of a very simple character. I have entered the antrum by the way referred to in very chronic cases, one of thirteen years' standing. I entered the antrum just above the first molar with the tip of the instrument, which required but a simple drill. I do not think any case that has gone on for six or eight months or a year should be considered as having been properly treated unless the curette has been freely used, and making the opening in this location it is quite possible to use the curette. You can throw in from a quart to half a gallon of fluid with a Davidson's soft rubber syringe by letting the patient hold his head forward and his mouth open. Almost all the fluid will run out through the natural opening into the nose. There is one point upon which we have not sufficiently touched in all that has been said on the subject, and that is this:—It has been said that the requirements are fulfilled when you have opened the antrum and drained it. I do not think so. In the case I have referred to, the patient had been under a physician, who was considered very skilful, for a period of thirteen years, and had had the antrum washed out daily for years. After you have opened the

antrum, some means must be adopted that will prevent the formation of pus. So after curetting, I think this is best attained by careful aseptic packing of the antrum. I have recently been very much pleased with this method. I have the antrum packed with narrow strips of unbleached muslin, which has been boiled and then immersed for twenty-four hours in 1 to 2000 HgCl., then in a mixture of eucalyptus oil, one part of oil, and about eight to ten parts of the compound tincture of benzoin. Some amount of inflammation may occur in the antrum after the first week, which, having been superinduced by the curetting, should be kept up, but within safe limits, by means of cloths dipped in ice water and applied over the face.

With reference to the data in treating ethmoidal disease and sphenoidal disease, I am sorry that the gentlemen who have given us such very able remarks have not mentioned anything reliable as to data in entering the ethmoidal and sphenoidal cells. Dr. Bosworth has said that it is easily done, yet he very wisely qualified his remarks by saying that we are working very near the base of the brain. Now, as I have remarked recently in our American Laryngological Association meeting at Rochester, New York, teaching the rhinologist to use the curette, the burr and the spoon in sphenoidal sinuses is not so simple a matter as teaching children to put beans in their noses; so that it rests upon those who are doing valuable work and teaching others, to give the men who have not been so happily situated in the smaller cities some data on which they can go as practitioners to treat their patients and do it with safety.

In a recent discussion, in which I took part, one gentleman, in answer to a question I believe, said that a very good guide was to measure two or two and a half inches from the tip of the nose, and that in a proper direction they then would find the ethmoidal cells. Another gentleman said, if you measure three inches you would find your position; another one, I believe, gave it as four inches; another suggested six inches. A very wide margin indeed! I merely bring this phase of the question up to show what a valuable and prolific field we have yet to work upon, and what a great amount of good our learned friends may do us by giving us correct data that will be useful—data with a much less liberal margin; and unless I can have such data I prefer to continue to do what some of my colleagues are very much shocked at me for having done, viz.: I make an incision through the *alæ nasi*, up alongside the nose where it joins the cheek, then cut through the septum and lay the nose over on one side of the face; then I have got both data and daylight upon the subject. The parts are replaced with so slight a scar as to be scarcely noticeable afterwards.

MR. MAYO COLLIER: I would wish to add my vote to Mr. Browne's proposal of our best thanks for the able addresses to which we have been treated by the introducers of this debate. There are but few moments left for discussion, and I would confine the few remarks I have to make to, in the first place, express my appreciation of the very able manner in which Dr. Luc treats disease of the frontal sinuses. I would also say that I do not quite agree with his method of opening the frontal sinus. Dr. Bosworth has touched the right cord when he says that collections of pus in any of these cavities differ in no respect from col-

lections of pus in any other part of the body. In opening the frontal sinus we have to modify our operation in order to respect the appearance of the patient, and we must devise a method which will produce a maximum of drainage with a minimum of disfigurement. I have had the opportunity of opening many frontal sinuses, and of watching the operations of others, and I have come to the conclusion that the old method of opening a distended frontal sinus is wrong. I have seen cases where the opening has been made near the upper and inner angle of the orbit go on month after month, and year after year, with a discharging sinus, leaving a nasty depression, causing some disfigurement, and some degree of hampering of the movement of the eyes. I have myself discarded this operation, both for latent and active empyema. The operation, which I have explained on several occasions before this society, consists of a vertical incision in the median line, going up three inches from the root of the nose; I then put in a small trephine, which enables one to see both sides, for in some cases it is almost impossible to be certain whether the disease be on the left or right side. I say it does not matter whether your empyema is active or not, you avoid scarring at the orbit, and, above all, you are able at once to see what is contained within the sinus. The important thing, of course, is to make a communication with the nose, and this can always be done by passing a bent probe through the infundibulum. It may be said that this drainage is not sufficient, and that in many cases the opening in the infundibulum gets blocked up. I say, Mr. President, that this method provides for this emergency by the introduction of a large tube through the infundibulum, and bringing it out of the nose. The pressure exercised by this tube upon the lining of the infundibulum keeps the passage patent. You will thus get a passage through your frontal sinus into the nose, and it can be readily washed out, if necessary a dozen times a day, by simply stretching this tube to allow your solution to pass. This method I have adopted in a large number of cases, and I have never failed. I, therefore, beg to recommend it to you.

Dr. DE ROALDES (New Orleans): Concerning the treatment of supuration of the antrum of Highmore, I think a distinction should be made between the purely operative methods and those resorted to for exploratory and diagnostic purposes. I should like to say that I do not agree with my friend, Dr. Mackenzie, when he states that it is not practical to reach the antrum through its natural opening in the nose. I very seldom resort to any operation on this cavity without first exploring, catheterizing, and washing it through the ostium maxillare. I have failed in only a very few cases; I do not hesitate then to drive a very small electric burr through the alveolar border, followed by the introduction of a fine silver canula for washing purposes. This pathognomonic injection, with its marked temporary relief, brings such a strong conviction to the patient's mind and senses that any further operative interference is readily accepted.

Of course, I would never recommend this practice except for exploratory purposes, or for the treatment of cases of acute sinusitis which sometimes accompanies or follows acute rhinitis, grippe, etc. In such cases a complete cure is often perfected in a very few days, after four or

five injections have been made. But these are not the intractable cases we have commonly to deal with, of a chronic nature, more or less accompanied with degeneration of the mucous membrane. If not of more than a few months' standing, such cases should be met by a large alveolar opening and full drainage through the mouth, with proper scraping and packing of the cavity, regardless of the possible penetration of food, a question which in my mind deserves very little consideration. If, however, we are dealing with those chronic intractable cases of one or more years' duration, so suggestive of the presence of fungating masses, of large polypoid degeneration, and sometimes of superficial necrosis, especially in the floor of the antrum, the plan is to at once perform a real surgical operation, lay up the patient for a course of two or three weeks so that he cannot continue the treatment himself. The canine fossæ must be widely opened so as to admit of the inspection of the antrum by sight and touch; all offending growths or diseased tissues removed by a thorough scraping, followed by a careful packing with iodoform or bismuth gauze.

I firmly believe that if this radical procedure was more universally adopted, even at an earlier period in the evolution of chronic sinusitis, we should meet with fewer cases of intractable chronic antral disease. These views I carried out satisfactorily some months ago in a case of nine years' duration, notwithstanding the fact that the patient had undergone at different times three operations at the hands of skilled Continental specialists (one Mickulicz and two alveolar drillings). Not satisfied with that experience, I submitted my patient to a fourth operation, hoping that a larger alveolar trephining and better drainage would improve his condition. My efforts were futile; I had finally to resort to the more radical interference though the canine fossa, when I found an extensive polypoid degeneration of the mucous membrane with large masses, especially in the direction of the tuberosity over a diseased last molar. The patient was well in the course of five weeks. I mention this case as one in which the operative treatment had been carried on through the nose, a method which, for my part, I will never recommend.

As to the views advocated by Dr. Luc in regard to his mode of treatment of the frontal sinus, I was led a few years ago to adopt the same plan of breaking through the floor of the frontal sinus. The case is instructive enough to deserve a passing mention. The patient presented himself at my hospital clinic with headaches, epiphora, displacement of the left eyeball, diplopia with two small bony growths of the upper and inner part of the orbit; an intra-nasal examination dispelled all suspicion of suppuration of the frontal sinus. A diagnosis of osteoma was advanced with a possible exostosis of the frontal sinus; and incision was made along the eyebrow and the inner part of the bridge of the nose. Upon chiselling through the bony growths they were found to be made of the raised thinned out wall of the frontal sinus over-distended by a large accumulation of mucus. We were dealing with a real mucocele of the cavity due to a permanent occlusion of the canal leading into the nostril clearly demonstrated by repeated and ineffectual probing. I had finally to adopt the procedure as suggested by Dr. Luc of breaking forcibly through the lower floor of the sinus, in order to pass a large drainage tube.

The case after a few days was transferred to a clinical assistant for after-treatment, in the course of which the cavity became contaminated, and the mucocele transformed into a regular abscess of the sinus. A secondary operation had to be ultimately performed. I must acknowledge, however, that it took a little over one year to cure the case, with an ugly puckering cicatrix. While I am strongly in favour of the procedure advocated by Dr. Luc to break through the floor of the sinus, in order to obtain free and permanent drainage, I would prefer to adopt the suggestion made by Mr. Collier, of entering the sinus through a linear incision, exposing the flat surface of the frontal in a direction with the root of the nose. This procedure will afford an easier access to either side of the sinus, and minimize the disfigurement.

Dr. DUNDAS GRANT referred to two cases in which complete cure of empyema of the antrum of Highmore had been brought about by the use of Krause's trocar for the purpose of irrigation, followed each time by a thorough blowing out of the residual fluid in the cavity and the insufflation of euophen. These were cases in which the cause of the suppuration was nasal rather than dental, and under such circumstances he was theoretically inclined to advocate intra-nasal treatment. He wished it distinctly to be understood that such cases formed the exception, and that, as a rule, the buccal operation was called for. He did not think that a communication between the mouth and the antrum was so innocuous as was generally supposed. The mouth swarmed with micro-organisms, many of which were pathogenic, or, at all events, pyogenic, and, although the antiseptic properties of healthy nasal mucus might be sufficient to counteract their virulence, the same was not necessarily true of the contents of a diseased antrum. This view was borne out by the improvement which in more than one instance he had seen to follow immediately after the closure of the alveolo-antral fistula.

In empyema of the frontal sinus he had found the use of Hartmann's and of Lichtwitz's curved canulæ of value for diagnostic as well as for therapeutic purposes, and instanced a case in which the apparent obstinacy of antral empyema was cleared up by means of these instruments, the persistent flow of pus after clearance of the antrum being traced to the frontal sinus. On several occasions he had perforated the bulla ethmoidalis, but his treatment of suppuration in the ethmoid cells had chiefly been confined to the removal of polypoid growths and enlargements of the middle turbinated bodies impeding the outflow of the discharges. He considered suppuration of the sphenoidal fairly frequent, and the cavity in most instances accessible by means of a fine canula, such as the one described by Lichtwitz.

Dr. DALY: I should like to ask Dr. Dundas Grant one question. Many of us would like to know how he knew that he was in the sphenoidal sinus with his tubular instrument.

I ask this question because I have never seen any two sphenoidal sinuses alike in any two specimens, and in some instances have been unable to find any opening of the sinus at all even in the dead subject.

Dr. DUNDAS GRANT replied that he employed two methods for introducing a probe or canula into the sphenoidal orifice: (1) the instrument was

placed in contact with the posterior margin of the orifice of the anterior naris, and its point was pushed obliquely upwards and backwards across the middle of the visible middle turbinal, between this and the septum, until the front of the sphenoid was felt, when by a little exploration from side to side, and usually a little outwards, an orifice could be felt, through which the point of the probe could generally be passed into an unmistakable cavity; (2) the instrument could be pushed along the floor of the nose to the back of the pharynx, and the point could then be guided upwards to the under surface of the sphenoid, then drawn over it, forwards and upwards, till it got on to the anterior surface, at the upper part of which the foramen was normally to be found. The careful injection of a few drops of boric solution often then dislodged a small quantity of muco-pus, with relief to the headache. He was unable to explain exactly why, in most cases, the feel to the probe in the interior of the sinus was as if the bone was bare or the mucous membrane extremely thin.

In an obstinate case of recurrent polypoid outgrowths, many of which escaped the cold snare as ordinarily employed, a mass of polypoid granulations came away during irrigation, attached to a flat plate of bone apparently from the front wall of the sphenoidal sinus, leaving a very obvious opening into that cavity. The growths had evidently originated from the sphenoid bone, and since then in all cases in which polypoid growths seemed to elude the snare with the opening directed sideways, he had made it a rule to endeavour to seize them with the opening directed backwards and upwards on the assumption that they probably grew from the sphenoid.

Prof. KRAUSE: I must second what Dr. Grant has said, that there is not the slightest doubt that we can go into the sphenoidal sinus without very great difficulties. There is a diagonal line, which leads between the middle turbinated bone and the septum, to the sphenoidal sinus, and if you should take this as a guide I think we are not always sure to reach the ostium of the sphenoidal sinus, but generally in cases of suppuration the bone is so thin that you can enter the sinus without difficulty, even if you will not find the ostium. This is readily apparent if you carefully examine a dried preparation.

Mr. MAYO COLLIER: I agree with Prof. Krause so far that the frontal sinuses frequently have an orifice in common with the anterior ethmoidal cells, but when the sphenoidal cells are shut off they communicate with the posterior ethmoidal cells, thence communicating with the nose, but in many cases there is no distinct vent for the sphenoidal cells.

Prof. KRAUSE: If I have understood Mr. Collier rightly he has said that the sphenoidal sinus has no communication with the nose. It is an anatomical fact that behind the posterior end of the middle turbinated bone there is an orifice communicating with the sphenoidal sinus, but, as Dr. Dundas Grant has said, it is not always directly in the middle line, and then you cannot enter in this way, but you must break through.

Mr. MAYO COLLIER: As teacher of anatomy at the London Hospital for many years, I must say I cannot agree with Dr. Grant or Prof. Krause in their remarks about a normal communication of the sphenoidal sinus. In many cases the sphenoidal cells have no communication

whatever with the upper meatus of the nose, only with the posterior ethmoidal sinus. When it has a communication with the upper meatus of the nose it is frequently quite small and situated vertical, immediately in contiguity with the posterior ethmoidal cells. I agree with Prof. Krause that if one apply force he can enter, but, I say, under no circumstances can you enter a normal sphenoidal sinus with the probe. If the sinus be distended you can with some force break through with a certain degree of impunity, but I reassert the fact that with a normal sinus it is absolutely impossible to enter from the nose.

Dr. DUNDAS GRANT replied to Mr. Mayo Collier, that his remarks applied to what were no doubt diseased sphenoidal sinuses, and he felt sure that Mr. Collier would find cases in his clinic in which he would have no difficulty in finding an entrance.

Mr. BARK : I am one of those who believe in the canine fossa operation for antral empyema. I usually make an opening with the electric trephine, sufficiently large to admit a flanged rubber tube of this size (*tube passed round*), which I have designed for that purpose. This can be done without an anæsthetic, and with very little pain to the patient. In many cases this procedure has been sufficient to ensure a cure.

There are three great advantages one can claim for this method :--

1. Its simplicity and safety.
2. The patient can himself flush out the cavity by compressing the cheeks and lips.
3. If from the presence of polypi, granulations or bony septa the condition is not relieved, you can enlarge the trephine opening, thoroughly examine the maxillary sinus, and remove the cause of the continued supuration.

I agree with Mr. Lennox Browne that myxomatous granulations frequently occur in the antrum, and in several instances I have found polypoid masses attached to the internal surface of the disc of bone removed by the trephine. In those cases I recommend that the anterior wall of the antrum be removed, and the interior scraped and plugged in the radical manner suggested by Mr. Heath. I am quite satisfied that the treatment of chronic disease of the antrum of Highmore by the removal of the anterior wall is the most rational and surgical procedure we can adopt, and in my hands has proved most satisfactory.

Dr. BRYAN : I think that sphenoidal disease is more readily reached than disease of the ethmoidal cells, although the region is certainly one of the most dangerous regions with which we have to deal. I cannot agree with the remarks of the gentlemen who have spoken about the accessibility of the cells, and the readiness with which they are opened, and I think certain precautions should be expressed ; for though undoubtedly a great many members here have the skill sufficiently to open these cells without danger, some who read the communications may derive a very wrong impression about the ready accessibility of them, and in consequence be led into danger. The ethmoid is one of the most dangerous regions that we as rhinologists have to contend with ; the space is very narrow and any undue pressure that may be made by a curette or burr is liable to penetrate the orbital cavity, which may cause

an abscess and lead to destruction of an eye. For this reason I think we ought to be very cautious how we express ourselves with regard to the treatment of disease in these cells.

Looking at the sections of the head herewith presented, I noticed an anomaly which I have not often heard referred to, and which will explain the frequency with which antrum disease is mistaken for disease either of the ethmoid cells or of the frontal sinus. The anterior sections show an abnormality in which the frontal sinus communicates with the antrum. However, any inflammation which has its primary origin in the frontal sinus would be very apt to show itself in the antrum, and would explain the origin of so many of these antral diseases which had been treated for such, but which have finally turned out to be sphenoidal or ethmoidal abscesses. I have recently had a case in which all three were involved, and after treating for six months the inflammation had apparently subsided, but one morning on re-syringing the antrum I discovered that it was full of pus. In this case the communication between the frontal sinus, which was very severely inflamed, was a pathological one, but there is a possibility of its being a natural communication, as shown in the photograph, which must not be overlooked.

Dr. SAJOUS (Paris) : I wish to allude to a practical point in connection with diseases of the antrum, a point which, I think, has been overlooked in connection with its treatment by fluids—viz., the influence of atmospheric pressure. The ostium maxillare is not always patent, and if we introduce fluid into the cavity under those circumstances it does not come out as easily as it goes in under the influence of the pressure that is exerted by the syringe. A tube being then introduced in such a manner as to slightly extend beyond the opening, a certain amount of fluid thus becomes imprisoned, remains at the bottom, and causes not only irritation, but sometimes inflammation. I make it my duty in these cases to carefully wash out the cavity, and to blow into it with the empty syringe after each washing, to force out any remaining fluid. I think you will find it a good plan to adopt, for it is generally very difficult to ascertain whether the ostium maxillare is patent or not.

Dr. DE ROALDES : Mr. President,—The case reported by Dr. Bryan, of which he exhibits such a beautiful drawing, represents an anomaly so uncommon and puzzling that it deserves more than a passing mention. A similar case came three years ago under my observation. Apparently I was dealing with a chronic maxillary sinusitis of the left side, undoubtedly of dental origin. Although carefully treated by a very large alveolar opening, repeated and thorough scraping followed by plugging with iodoform gauze, the persistence of the suppuration, the fact that judging from the condition of the packing it was limited to the inner and upper part of the antrum, led me at first to suspect some necrosis. After enlarging the alveolar opening in the direction of the median line, and while searching with a fine and malleable probe for exposed bone, my instrument engaged itself in a canal which, judging by its depth and direction, must lead to the frontal sinus. An attempt to enter through the nose, even the lower part of the naso-frontal canal in its normal position, proved futile, when an injection by means of a fine silver canula following

in the antrum the same direction as the probe forced the water through the right nostril. The fact that there was no recurrence of the liquid through the naso-pharynx, the sensation of the patient, with repeated probing and subsequent injections, indicated the existence of an anomaly, with pus flowing directly from the left frontal sinus into the antrum. What was never explained to my satisfaction was the absence of pus in the right antrum, being given the existence of such anomaly with a ready communication between the frontal sinuses. The case ended favourably after breaking forcibly through the internal wall of the left antrum, and the removal of the anterior extremity of the middle turbinated body, with direct treatment through the nose of the affected frontal sinus.

As to the causes of suppuration of the antrum of Highmore, I have come long ago to the conclusion that certainly seven tenths of the abscesses of this cavity are of dental origin. In our southern clinics, where the negroes form a large proportion of our patients, they are found to be much freer of these suppurations. I am strongly of the opinion that such a comparative immunity is due to the well-known fact of their stronger dental system, as compared with the one of the Caucasian race.

Dr. MACINTYRE: I think Dr. Bosworth struck the right note when he said that these cavities ought to be treated upon the same surgical principles as we would treat mischief in any other part of the body. I agree also with Prof. Krause when he says that if we thoroughly applied the general principles of surgery to disease in these cavities there would be a considerable reduction in the size of the literature. While we are all agreed, however, on the general principles there is a great deal to be said about details, because unanimity of opinion does not at present exist on many of the points brought under our notice this morning. For example, I would like to hear a little more about when and where we ought to interfere in chronic mischief in the antrum of Highmore. No doubt a good deal was said about nasal operation, and a little about opening through the canine fossa. This subject has engaged the attention of a great many associations, both general and special, and in one recent discussion a distinguished member of our profession said that the ordinary method of operation has yielded comparatively satisfactory results in his hands, but when he had adopted the operation through the canine fossa he had been disappointed in the result. At the same meeting another gentleman said that he had frequently performed this operation with the most satisfactory results. Clearly, therefore, there is a difference of opinion, and from the present standpoint of treatment, which in our special department is so largely of a surgical nature, I think there is something yet to discuss. If I have erred in the past with regard to treatment of the antrum of Highmore, it has been in the direction of too conservative surgery. As a rule I open the cavity from the alveolus, and frequently also, after the method of Krause, open the inner wall of the antrum, and I must confess in a large number of cases this treatment has proved very satisfactory.

Many cases, however, do not, and consequently if the mischief remain, a grave responsibility rests upon the surgeon in allowing cases to go on from week to month, and from month to year, without active interference.

The experience, therefore, of those who have frequently opened the canine fossa is of the greatest value. While thus advocating more serious methods of treatment, after due consideration one should be very careful in giving a hopeful prognosis, because sometimes conditions are present which cannot be removed by opening the antrum of Highmore.

A patient consulted me lately whose antrum had been opened by another Scotch surgeon some time ago. The patient is now suffering from malignant disease of that side of the upper jaw, and doubtless when the operation was performed this mischief was in an early stage. I saw a case the other day from the west of Scotland, where there was distinct evidence of pus coming through the opening of the antrum, but on looking into the mouth I could see an opening between the cheek and gum, and on passing a probe inside, the diagnosis was again easily made of malignant disease in the region of the upper maxillary. With regard to the remark made by Mr. Collier about entering the frontal sinus, I had the pleasure of seeing one of the cases to which he referred before operation, along with many other Fellows of the Association, and the result subsequently quite proved the advisability of the course which he had suggested. I have also had an opportunity of noting how admirably his suggestion of stretching the drainage tube answers in such cases during the after treatment.

With regard to disease of the sphenoidal sinus, I have not seen many such cases. In one case, however, seen by Dr. Woakes as well as myself, there was no doubt of sphenoidal mischief coexisting with disease in some of the other accessory cavities, and this patient died after a long and serious illness.

The ethmoidal cells are probably, after all, the most interesting to us, for the reason that disease in this region is exceedingly common and very difficult to treat. Dr. Bosworth has very well pointed out the difficulties in removing the pathological condition in such a honeycombed structure as the ethmoidal cells. Nevertheless, they can often be satisfactorily treated by free drainage. I have become accustomed to the use of the electric drill in such conditions, and find the instrument very satisfactory. If we remove all excrescences, and open through the walls so as to establish free communication and drainage, the most satisfactory results may thus be obtained. Nevertheless, disease of the ethmoidal sinuses is one of the most interesting subjects to us because of its frequency, sequelæ and difficulty in treatment, and for that reason I consider it well worthy of greater attention than we have yet given it to-day.

Dr. STOKER: I think it has been abundantly evident from the discussion we have listened to to-day that there is a diversity of opinion with regard to the surgical treatment of the accessory cavities of the nose. I rise to make a few suggestions. I am induced to make these remarks by an observation which fell from Dr. Mackenzie with reference to the existence of certain micro-organisms in the nose or in the mouth, which are regarded by some people as being inimical to healing, and against the performance of certain operations. I have recently discovered a new treatment, *i.e.*, treatment of wounds by oxygen, and in pursuance of this treatment several facts of an extraordinary nature have

come to light, and one I think bears very strongly on this point. I am sorry to have to introduce legs. It is a case in which the sufferer has an ulcer on either leg; one has been treated by the surgeon with the ordinary antiseptic methods, and the other by oxygen. I regret to say that the ordinary antiseptics are failing, and the wound is not healing, and I am glad to say that the one treated with oxygen is healing. Bacteriological examination has been made by the Clinical Research Association, and the result is that the leg which is not healing is perfectly free from micro-organisms, while the oxygen leg that is healing is full of micro-organisms. It is also abundantly evident that the conditions which admit of treatment in antral disease are not the very best. One case has been quoted which had existed thirteen years, which is a considerable portion of one's life to suffer with such a painful and disagreeable complaint. The whole effect of oxygen on chronic ulcers and unhealthy surfaces has been to induce a healthy form of granulations, and I would suggest that in cases of antral disease a solution of equal parts of oxygen and purified air should be used by being passed into the antrum, and I think the results will be found eminently satisfactory, judging from my experience under other circumstances. I offer that suggestion, for I think in the presence of so many distinguished Continental and American friends it is desirable we should have something new to offer from the old country.

DISCUSSION ON THE THERAPEUTICS OF DIPHTHERIA WITH SPECIAL REFERENCE TO ANTITOXIN.

DR. G. SIMS WOODHEAD : Mr. President and Gentlemen,—Although I thank you most heartily for your kind invitation to me to open this discussion, I cannot but feel that you would have better consulted your own interests had you asked one of the members of our profession who has had practical and extended clinical experience of the use of antitoxic serum in cases of diphtheria.

As most of us are aware, this remedy has now received a most extensive trial, and in the majority of cases with admirable results—so admirable that those who do not look for an absolutely specific action in the remedy should be thoroughly satisfied with the success that has already been obtained.

After careful consideration it has appeared to me to be the wiser plan to confine my remarks to a brief statement of those facts that have come under my own observation during the last eight or nine months, and to indicate the lines on which I think further advances may be made in the successful treatment of diphtheria.

I shall not attempt to go categorically through these various points; I shall merely attempt to indicate some of the more important ones, or at any rate those which seem to me to have a special bearing on our knowledge or the acquisition of knowledge in connection with this subject. During the past eight or nine months I have had the opportunity of examining a very large number of specimens (nearly five thousand) taken from over two thousand cases of diphtheria, and as a result, from a somewhat rough analysis of those cases, I have found that in those that were

returned as cases of undoubted diphtheria, the long form—I am now repeating what has been already observed, though I shall have some reservations and modifications to make—of the diphtheria bacillus has almost invariably been present; whilst in the same cases a certain number of what we may speak of as wedge-shaped and irregular forms of diphtheria bacilli have also been found. These long and irregular forms have been present in such numbers that we may say we had practically pure cultures; in a small proportion of the cases, however, we had, in addition, what have been called by some the short form of diphtheria bacillus, by others a pseudo-diphtheria bacillus.

It was found indeed that, in those cases of undoubted diphtheria where there is or has been a distinct membrane, or where there has been very considerable congestion of parts—especially when accompanied by a marked toxic condition, the long forms of bacilli have, almost invariably, been present. There have been comparatively few exceptions to this rule. We have had a few cases in which streptococci and some in which staphylococci only could be found in what appeared to be, at first sight, undoubted cases of diphtheria; but, on going more carefully into the history of these cases, it was found that in almost all of them, though the symptoms were comparatively acute in the first instance, not only was the course of the disease shorter, but recovery took place in a large percentage of the cases. In those cases of diphtheria that have been returned as doubtful, from the clinical point of view, when the cases were first examined—though an opposite diagnosis may have been made at a later period—the long form of diphtheria bacillus has been found in a considerable percentage. Along with this long form of bacillus a number of irregular forms have been met with, but not in such large numbers as where the cases were undoubtedly cases of diphtheria. The short forms, however, were invariably more numerous than in those cases in which we had a very definite and distinct diphtheritic condition. Here also we had a larger proportion of cases in which staphylococci and streptococci only were found, and these cases, as in the first group, ran a comparatively short course; their recovery took place more rapidly and was more perfect than in the other cases. Coming to the convalescent cases, we find that the short form of diphtheria bacillus predominates. I am speaking now of the *short* form of bacillus—not pseudo-bacillus. I do not speak of it as an irregular bacillus, because it is found so very frequently in almost all convalescent cases, and, as we have seen, also in a certain proportion of the doubtful and even of the undoubted cases. In the convalescent cases, too, we find that the long and irregular forms persist for a very considerable time in a certain proportion—a small proportion, perhaps about seven or eight per cent. We have now cases that have been under examination since the middle of February, in which diphtheria bacilli still persist.

These are important points, but I have come to the conclusion that it would be exceedingly unsafe to base any general statement on the differences observed in the number of cases that we have already examined, for, although so many specimens have been examined, it has not been possible in all cases, or even in a large percentage, to test the activity of the

bacilli on animals. It has only been possible to take specimens, and, of course, the results up to the present time are comparatively incomplete ; for this reason I do not wish to lay down any general statement as to the exact rôle of the various forms of diphtheria bacilli in the production of the membrane or in the formation of toxin. There is, however, one thing we can be absolutely sure of, and that is, taking the diphtheria bacilli in separate groups of cases, we can divide them into bacilli which have a very great power of forming toxic products ; into bacilli in which this power is comparatively small ; and into diphtheria bacilli in which the power of forming toxic products is almost absent. Moreover, it will be generally agreed, I think, that the long forms certainly have a greater power of forming toxic products than have the shorter ones, and than have most of the irregular forms.

For instance, a tenth of a cubic centimètre of a forty-eight hours' culture of the long form of the diphtheria bacillus will in most cases inevitably cause the death of a guinea-pig of five hundred grammes weight in from twenty to forty-eight hours. From a tenth to a half of any one of these cultures—a forty-eight hours' culture in broth—will almost invariably cause death in from twenty to twenty-four hours. But of the short form of diphtheria bacillus it is often necessary to give a dose of from two to three cubic centimètres in order to produce the toxic symptoms and ultimate death, and in some cases even this quantity is insufficient. The bacillus taken direct, from one case, from the throat, and grown in the usual fashion—that is, in two per cent. peptine broth kept for forty-eight hours in the incubator—would only kill in doses of one-half of a cubic centimètre ; but the same bacillus when passed through several animals—that is, two or three guinea-pigs in succession—may eventually give a toxin which will kill in a dose of from a fourth to a tenth, and in some cases even less than that. So that, although the toxin from a primary culture from the throat may only kill in a dose of half a cubic centimètre, the toxin from such bacillus passed through several guinea-pigs or dogs will kill in a dose of from a quarter to a tenth of a centimètre. The fact that you can make your toxin five times as strong by passing the bacillus through several guinea-pigs before making your final cultivation I regard as a most important point. It indicates how, under certain conditions, we ought to be able to trace the gradual rise of virulence in any epidemic of diphtheria, and how under favourable conditions even comparatively non-virulent bacilli may after passage through the throats of several patients become much more toxic, and so gradually more virulent. We find also that the converse holds good, for it has been observed that, although we may keep up the virulence of the diphtheria bacillus by cultivating it in successive generations on consolidated blood serum for a very considerable time, yet when the cultivation is continued in broth the soluble products appear to exert a very definite effect on the bacilli. The bacilli in the broth produce their toxins ; the toxins remain in contact with the bacillus for some time ; and, if an old growth—say, one of a month old—of the diphtheria bacillus that has been grown in a flask for the purpose of producing toxins is taken back to the blood serum, two things may be

noted: first, the diphtheria bacillus does not grow nearly so readily. It has become to a certain extent devitalized, and, instead of appearing as a naked eye growth at the end of sixteen or eighteen hours, you may find that there is no growth visible for twenty-four to forty-eight hours, or even longer, but after that a pure culture of the diphtheria bacillus, which has almost all the morphological features of the original bacillus, is obtained. If a broth culture is made from this again and animals are inoculated it is found that it has lost a very considerable portion of its toxin-forming power. The bacillus then, even in a very short space of time, may be very decidedly modified, and, just as we may follow the analogous process to the rise of the virulence of an epidemic, a fall after a certain stage may be observed. We may, indeed, gain much information as regards the rise and fall of any diphtheria epidemic by following the modifications of the bacillus in the throats of the patients during the course of the disease in any single epidemic.

This being the case, we must accept the fact that although the diphtheria bacillus is a specific bacillus, and has the power of forming active toxins, it may be placed in such conditions that it is not able to live long in the human subject or, living there, may retain little of its toxin forming power. We may have a gradual immunization of the patient from the presence of a comparatively non-toxin forming bacillus. The patient may become comparatively immune from the fact that he has in his fauces a bacillus of no great toxin forming power, but in which there is still sufficient power to cause certain modifications in the cells of the body, and consequent modifications of the blood serum, and a certain immunity may be obtained even in those cases where there is no distinct development of the disease. We have not to go very far for an analogy, because those of you who have followed the subject of immunity will remember that in the case of anthrax, the saprophytic anthrax which was described by Hueppe and Wood was found to have the power of producing a certain immunity in the lower animals, although in no instance was it possible to set up the anthrax disease by injecting even very large quantities of this bacillus; so that we have a corresponding condition in another disease which has been thoroughly worked out. We have apparently the same series of conditions holding good in the case of diphtheria bacillus, in relation to the modified diphtheria bacillus (we must speak of it for the present as a modified diphtheria bacillus).

Beyond this difference in the activity of different bacilli, however, a very great difference in the susceptibility of individuals attacked by the diphtheria bacillus is met with.

For some time past I have been endeavouring to render immune a number of horses in order that we might obtain antitoxin serum from them. These animals differ enormously as regards the amount of toxin that may be introduced without setting up any very great rise of temperature or great local swelling. I have, however, come across two animals in which there seem to be such a very great susceptibility to the action of the diphtheria toxin that it was almost impossible to give small enough doses to produce anything like the reaction that we wished, that is, to produce a reaction that did not give very great discomfort to the animals

and send up the temperature, speaking relatively, enormously. To one horse I gave two cubic centimètres of toxin, which killed a guinea-pig in the proportion of one fourth of a cubic centimètre to every five hundred grammes. This caused slight local swelling and a rise of one and a half degrees of temperature, and the animal was quite well within two days. In another animal the effect was even less : there was very little rise of temperature and less local swelling. This animal had an injection of five cubic centimètres, and the reaction then was not distinctly marked. But we had a bay pony to which I gave half a cubic centimètre, and the swelling and temperature in this case was so considerable that I decided not to subject the animal to another injection for a considerable time. In the meantime I went on with the other animals, and the dose was brought up to about forty cubic centimètres. I then gave the pony a further dose of half a centimètre, but the reaction was again tremendous as compared with that in the other animals, and I did not inject the animal again for some time. Later I again gave it a small dose, but the reaction was still too great, and it was evident that it would be impossible to get this animal immune without subjecting it to some risk, and at the expense of great loss of time.

With regard to the other two cases above mentioned, the dose that they received was within a very short time increased to one hundred and fifty cubic centimètres each. These two animals were comparatively insusceptible to the action of the toxin, the other was exceedingly susceptible. I quite believe that in the latter case it would have been possible to get this animal into an immune condition, but the practical difficulties would be too great, and it does not appear to be advisable to go on with the process in animals which show too marked reaction when only small doses of the toxin are given. This has a very great bearing on the disease as met with in the human subject ; it must be noted that, as in the case of other diseases, there is the great difference of susceptibility in individuals, and it must be anticipated, that even in the same outbreak, very different results from the action of bacilli of the same virulence will be met with. This is a point that should be remembered in connection with the use of antitoxic serum as a prophylactic agent, because I believe that, just as in the case of tetanus, we have more to hope for from the prophylactic treatment than we have from the serum treatment, even when resorted to in the early stages of the disease.

In the case of tetanus we know that the amount of serum required to be given after the symptoms have once manifested themselves is from a thousand to ten thousand times as great as the prophylactic dose. If a certain amount of the antitoxic serum is injected before the toxin is introduced a small quantity of the antitoxin will neutralize the action of a comparatively large quantity of the toxin and the animal will recover. If, on the other hand, the toxin is introduced first and is allowed a day or two, as it were, in which to do its work on the tissues before the antitoxin is injected, the proportion of antitoxin to toxin must be reversed. It is now necessary to give a large proportion of the antitoxin to protect the animal against the small proportion of the toxin. In connection with this fact the importance of early diagnosis comes prominently forward.

From an examination of a large number of specimens, in from twenty to twenty-five per cent. probably, it is possible, I believe, to make a positive diagnosis immediately, or within half an hour, by simple microscopic examination. This in itself is an important fact, but it is one we sometimes are apt to overlook in our great anxiety to obtain cultures from the throat, and, therefore, it is evident that everyone who has to deal with cases of diphtheria will have to study the method of searching, by means of the microscope, for diphtheria bacilli in the material taken from the throat. Beyond this, it is possible to determine the presence of the bacillus, in from fourteen to eighteen hours, in about ninety per cent. of those cases in which diphtheria bacilli of the long form are present, though there are some cases in which they are missed. They may be missed on the first, second, and sometimes even the third time, to be found on a fourth occasion, and it is quite possible that in some cases they have been missed altogether from the fact that no examination has been made beyond the second or third time. But it is of great importance to know, and I have satisfied myself, having the opportunity of examining such a large number of cases, that one can immediately determine the presence of diphtheria bacilli in about twenty-five per cent. of the cases, and by culture methods in sixteen to eighteen hours in ninety per cent. of those in which they are actually present. Of course, there are cases in which bacilli cannot be found, but in which they must be present, but it is impossible to say in what proportion of cases this occurs; I believe that, as our methods improve, the margin will become smaller and smaller until such cases are almost entirely eliminated.

In connection with the microscopic examination of the diphtheria bacillus, I should like to mention one practical point. Most people use methyl blue as the regular staining reagent. Undoubtedly this has great advantages from the fact that it gives such a definite appearance to the diphtheria bacilli, but against this must be set the fact that all organisms in the preparation are stained very distinctly by the methyl blue. I prefer Gram's method, however, as so many of the organisms which are found in the throat are, by this method, eliminated from our field of view. The diphtheria bacillus is stained distinctly, but there is the further advantage that by washing successively in fresh alcohols exactly the same results may be obtained as when methyl blue is used—that is, a great part of the staining may be washed out, and the characteristic striped appearance obtained. Indeed, Gram's method is so much more useful for diagnostic purposes that I have now entirely given up the use of methyl blue for diagnostic staining purposes. It follows from all this that the clinical diagnosis may be confirmed or modified at an earlier period than was at one time supposed to be possible, and the antitoxin treatment of the disease may be commenced at an early stage, when the prospects of obtaining a successful issue are much greater.

As regards mixed infection in diphtheria. In all the cases where we have had mixed infection the serum does not seem to be so useful as in the cases of pure diphtheria. It is important to bear this in mind, for a special reason. Prof. Roux considered the disease more virulent where he had mixed infection, from the fact that cases treated with

serum did not improve so rapidly as those cases in which diphtheria bacilli alone were present. It must be remembered, however, that the antitoxin serum prepared from a diphtheria bacillus can only be specially useful, if our theories are at all to be relied upon, as regards the diphtheria bacillus and the toxins produced by it. Therefore, if we have a mixed infection, the antitoxin serum may assist in the treatment of the patient as far as the toxins of the diphtheria bacillus are concerned ; but as regards the suppurative or the pyæmic organisms, it can have but a minor effect : consequently, if Roux's statistics are correct, we should naturally expect that his results, if the serum is specially specifically useful, should be better where the diphtheria bacillus alone is present than in those cases in which the pyæmic organisms are also present. We must not take this as in any sense indicating the severity of the disease, but we should take it rather as indicating the limitations of the power of the antitoxic serum. Other observers say that the most virulent cases are those in which the pure cultivations of the long bacilli are present, and certainly from my own observations this seems to be the case, especially after investigating specimens taken from the throat after death.

There is another point to which I should like to allude, namely—it is said that this "specific" material will cure all cases of diphtheria. Now I think this is a very unfair way of putting the matter. Many enthusiastic people have put antitoxic serum forward as a specific for every case of diphtheria. We know that this cannot be the case, for if the toxic products of the diphtheria bacillus are allowed to act for any length of time on the nerves it is known that certain grave lesions must be the result. Roux, Sidney Martin, and others, have definitely proved this. No, diphtheria antitoxin cannot make these lesions good if once they are allowed to be formed. It can stop any action of the free toxin, it may even stop the disease at such a stage that the patient may recover, but for this very reason we must expect that, for some time to come, those cases that have been treated with diphtheria antitoxin at late stages of the disease must suffer from failure of the heart's action, and that nerve symptoms must supervene in perhaps even a greater number of cases than at present, simply from the fact that a number of patients may recover who did not recover under the old conditions. These patients will have nerve and muscle lesions. We cannot get rid of these by the use of antitoxic serum given in the later stages of the disease when the organic mischief has been done, they must be left to nature ; only nature can restore, and then often imperfectly. This, I think, is an important point, and one which will at some time or other be made much of, and it is one that in the nature of things must be met.

Before I close I should like to give briefly what, so far as I can see, are the main points on which the treatment will turn, and probably those on which discussion will take place. We may—and can—as we know from actual experiment in the laboratory, antagonize the action of certain toxins in the body. This is not theory ; it has been actually and definitely proved by a very large number of workers. If this is done at an early stage of the disease, we have every prospect of effecting a cure in those cases where the amount of toxin absorbed is not so great that the tissues

are actually paralysed. Even in the later stages some cases may be pulled round which would not otherwise have recovered. There are cases which will receive sufficient assistance from the antitoxic serum to enable them to turn the corner even after the toxin has been acting for a considerable length of time on the tissues. It is, however, impossible to make good any organic lesions that have already been set up by the action of the toxin ; the healing of these is not within our power, and must be left entirely to the *vis medicatrix naturæ*. In most cases the patient is rendered more comfortable by the injection of the serum. Whilst the necessity for operation, though rendered less frequent, is not entirely done away with, there seems to be a strong opinion gaining ground—on this point, however, I speak with great reservation before such an assembly—that intubation will take the place of tracheotomy, from the fact that the patient is placed under so much better conditions. On this subject you are all more competent to speak than I can possibly be. The last point is, that prophylactic treatment is now within the range of possibility, and I believe that during next week we shall have placed before us by some of our American friends a number of most remarkable examples of the prophylactic power of antitoxic serum, and the protective power it exerts in a community where diphtheria has broken out, or has for long been a very common disease. In the future of antitoxin I have the fullest confidence. I do not believe that by its agency we shall be able to cure every case of diphtheria, but when the cases are seen and diagnosed at an early stage the action of the toxin on the tissues of the body may be neutralized and prevented by the injection of antitoxin. I am strongly convinced that the serum is harmless when injected even in fairly large doses, and I am satisfied that not only is it possible to diminish the case mortality, but also to bring down the actual number of cases attacked by protecting children who, though exposed to infection, have not as yet contracted the disease.

Mr. LENNOX BROWNE asked Dr. Woodhead whether he could give any statistics as to the numbers treated and the proportion of recoveries under antitoxin.

Dr. WOODHEAD : I do not feel at liberty to give any figures, as the cases were under the care of other men.

Mr. LENNOX BROWNE : Mr. President,—You have kindly intimated to me your desire that I should follow the opener of this discussion from the clinical aspect, and while not hesitating to act on your wish I feel myself at a considerable disadvantage since I could not tell beforehand exactly the line that would be taken ; but I do not feel at any loss to thank Dr. Woodhead for coming here to-day, and for giving us such a very able address. In anything I may say that appears antagonistic to what he has said, I desire that my remarks should be looked upon rather as the questions and doubts of a clinician seeking for light from the scientific expert, than as contradictions of any definite and well-ascertained conclusions. I would first venture to refer to what Mr. Jonathan Hutchinson has said in a plea for better clinical research, namely that, with few exceptions, the bacteriologist has told the clinician very little that the latter had not already accepted in practice, or that he had not very good

grounds for opposing. Now I really, with the greatest respect, do not see how anything that we have been told to-day with regard to the scientific aspect of this disease and its treatment by antitoxin can be looked upon as very new by an experienced bedside observer.

I am, however, very struck by the fact that Dr. Woodhead does not dogmatize, and in that he differs advantageously from some other scientific experts with whom we are acquainted. For example, he is not very certain that the long bacillus need be absolutely virulent, or that the short form is not always mild. I had a very curious case of a man, who presented all the signs of lacunar tonsillitis. I did not think it was diphtheria from its clinical aspect, but a culture from his throat afforded the finest specimen I have ever seen of the long bacillus in almost absolute purity. He made a very good recovery, without paralysis. Four months later he came back to have enlarged tonsils removed, after which he developed on the wound a pseudo-membrane, which, submitted to bacteriological examination, revealed a short bacillus. Dr. Woodhead saw the case when exhibited before the Pathological Society in this room, and said it was very characteristic of the so-called pseudo-bacillus. Now the curious thing is that in a further sub-cultivation he developed again not a shorter but a longer bacillus. The examinations were made by Dr. Galloway, of the Clinical Research Association, and the result just shows how very little we can dogmatize on the character of the bacillus in regard to its length.

What we have been told as to the varying immunity and susceptibility of horses is very valuable ; for if horses vary, why not human beings ? It seems to me that a remedy of the nature of antitoxic serum depends so much on obviously inconstant elements of personal difference that very great difficulties are offered for securing an accurate standard, an objection which does not apply to the ordinary mineral and vegetable remedies of our pharmacopœia, and, as it appears to me, this uncertainty in strength constitutes one of the greatest difficulties in regard to serum treatment. It does not only depend on the difference in the horses—wherein, by the way, experiments calculated to exclude glanders and tubercle do not exhaust all possible source of blood infection any more than it would in man—it depends to a great extent on the difference in the individuals who prepare the remedy. We know with drugs that we have to depend on the repute of the house that supplies them, and I would suggest that there must be some element of difference in the preparation, which depends—perhaps enormously—on the ability and conscience of the subordinates who are employed in its preparation.

As an example of this, let us consider how variable is experience.

With regard to skin eruptions. I have followed the course of 100 cases treated by serum, in which there were 38 skin eruptions and joint pains. Well, I am told that these skin eruptions and joint pains have no clinical importance. That is as may be, but they are certainly septic in their nature. At the same time, why should this series of 100 have 38 per cent. of these complications, however harmless, and Moizard, of Paris, should get only 14 per cent., and some other observers even less ? There must be something of variability in the material employed

to account for these differences. These 100 cases were treated under the most absolutely favourable circumstances of hygiene and *personnel*, whereas, in the "Annals of the Pasteur Institute" of September last, Roux protested against the hygienic conditions of the patients he was called upon to treat, and he obtained better results. In Buda-Pesth we hear of a mortality prior to antitoxin of 62·5 per cent., and with over 11,000 cases treated in the last six years in the various isolation hospitals of London the mortality has been but 30·3. We read now that in Buda-Pesth they have lowered the mortality from 60 to 25, but those who have followed the "British Medical Journal" epitome of foreign cases will have read that a large number of patients, if admitted late in the course of the disease, are not submitted to serum treatment, because they are considered so hopeless that they would "spoil the statistics."

In our Asylums' Board hospitals every case is registered and is included in the returns, whether the patient dies within ten minutes or ten days of admission, but if the superintendents of these hospitals were permitted to make a similar reduction for patients dying within twenty-four hours after admission, the mortality at one hospital, which in two years was less than 27 per cent. on nearly 2500 cases, would have been reduced to about 21 or 22 per cent. Even in the different Metropolitan Asylums' Board hospitals, where all other circumstances are uniform, there is a variation in the statistics; one superintendent has 40 per cent. of deaths and another has only 26 or 27 per cent. The surroundings of all these hospitals are the same, the food, nursing, the cubic space and the attention are the same. Logically, therefore, the results *must* depend on the variation in excellence of the measures that have hitherto been pursued. In making, then, a comparison under former treatment, and that by antitoxin, you must not take your standard from Buda-Pesth with over 60, nor from Paris with over 50, nor from the Metropolitan Asylums' Board hospital that has had 40 per cent., but you must make it with that hospital that has had the lowest mortality under former methods. Of 100 cases treated at the North-West London Hospital, there were 27 deaths, and the mortality for the year 1894, for 1163 cases, was 27·1.

I had no share in the treatment of these cases, but merely watched them under the *doyen* of medical superintendents, Dr. Gayton, and I found that there was no improvement, either in mortality, or in any other respect, under antitoxin over former remedies. It cannot be long a secret, in fact it is an open secret now, that as a result of the mortality under the antitoxin serum, antitoxin serum has practically ceased to be employed in this hospital since last May.

Now as to the question of early diagnosis, concerning which so strong a point is made in cases to be injected with serum, I should like to know the disease in which the treatment is not more successful if the diagnosis is made early. Naturally, if diphtheria is a disease that kills by its toxic products, the longer the disease has existed before admission the greater is the systemic toxæmia of the patient, and the more difficulty is there of treating that patient successfully whatever the remedy employed.

Dr. Sims Woodhead has definitely laid it down to-day that serum cannot affect organic lesions; that is beyond doubt, but the question is,

can it intensify them? I do not believe that serum produces any new disease, and I have been very much misrepresented on that point. Dr. Ruffer has said in the "Medical Annual" for the current year that there is not the slightest ground for my statement that antitoxin produces kidney mischief. I never said it did, but what I did say was that there is evidence to show that serum injections increase what we may call a normal complication of diphtheria. And I think that when we consider what is the effect on the kidneys of injecting pure blood serum, or of administering albumen in excess in any form, we must agree that such injection puts an extra amount of work on the kidneys. Unfortunately, it is not always possible to get a *post-mortem* examination of the patient without the consent of his friends, who are often influenced against one by ignorant people, and, therefore, out of these 27 deaths at the North-West London Hospital, only nine *post-mortems* were obtained, but in every one of these there was nephritis. Benda (Berlin) has found nephritis in 33 out of 39 cases treated by antitoxin, and I cannot understand why there should be any disposition to ignore the fact that there is a tendency under serum injection to increase of kidney pressure.

With regard to heart failure, I do not quite follow Dr. Woodhead, or similar arguments by others, that because more patients recover, therefore more die of heart failure. At any rate, I cannot make that consistent with the fact that the general condition of the patient is improved if the patient, having recovered from the acute stage under serum, is finally to die of heart failure. An increased tendency to myocarditis has been accounted for in the same way, but I do not know any clinical test by which one can tell that a patient has myocarditis, unless it be exhibited at the side of the *post-mortem* bed rather than that of a ward. We have heard a good deal lately on the subject of experiments on rabbits, and I think, if we take the experiments on rabbits, we shall find that what happens in the rabbit happens in the infant—namely, that serum, whether normal or anti-diphtherial, is prejudicial to the nutrition of the full-grown animal and to the growth of the young. I have not seen that the general condition of the patient is improved by antitoxin; on the contrary, I have been struck by the dreadful anæmia that persists in those children who are treated by antitoxin. From my own observations of the 100 cases referred to, I have come to the conclusion that there is something in the treatment of antitoxin that makes the recovery much harder than in those cases treated by the classical method. We can influence cardio-respiratory failure, we can influence an enormous amount of toxic symptoms by injection of strychnine and by the administration of other pharmacopœial remedies and stimulants. Dr. Woodhead says we can do nothing against these complications, and have to trust to the *vis medicatrix naturæ*, but what I want to know is, if we are to leave these things to nature, where are we going to stop? In some cases we hear that even stimulants are not given.

To conclude, I fear I have not done myself or the subject at all justice, but I would like to say a few words as to statistics. Forty-three cases were treated in the hospital where I was observing the cases. After only twenty-two days of official experiment, some of these had had serum

administered only the previous day, or two days before the case-table was drawn up, in which it was published in the "Lancet" and "British Medical Journal" that here was a mortality of 4·6 per cent. by antitoxin, and it was specially noted in the "Lancet" as "the lowest mortality on record." No patient had been treated for more than twenty-two days. Now, who will say that a patient suffering from diphtheria is out of the wood and is safe on the twenty-second day? Within two or three days of publication of these figures that percentage was doubled, and at the end of four months there were 27 deaths in 100 cases, of which these 43 were a portion. The same thing occurred in the "British Medical Journal." Mr. Ernest Hart published a review of the first 35 cases, with a mortality of 6 per cent., but when the figures rose to 200 the mortality is found to be 22 per cent. I have no doubt that there is some good in the treatment, and I feel confident that as time goes on we shall hear more of it, but we do no service to the cause by ignoring facts and overlooking risks. For my own part, I believe that serum injections are warranted in diseases that have resisted classical methods. Thus they are justified in tetanus, and also perhaps in hydrophobia, but I cannot think that, seeing what can be done by the classical methods for diphtheria, and considering the important element of uncertainty in the serum, we are justified in accepting the treatment at present as the specific remedy which is by many claimed for it. It may, and probably will, be more perfected, but I think at present, at any rate, we ought to suspend our judgment, or, at least, moderate our enthusiasm.

I would like to say one word about the use of antitoxin as a prophylactic. Without any doubt, deaths have occurred under injections for prophylactic purposes, and this being so, I hold that we are not justified in using serum as a preventive.

Dr. WOODHEAD, answering an inquiry by Dr. J. N. Mackenzie, said: As regards your question I should certainly say, from laboratory experience, that I should have no hesitation in recommending the antitoxin serum as a prophylactic against diphtheria. It can be given in very much smaller doses, about a quarter of the dose you would give for the mildest case of diphtheria, and when one comes to sum up the advantages to be gained, especially where children are crowded together, one would be anxious to try almost anything that might prevent the outbreak even in a single case. I am afraid, however, that for some time to come, as has already been remarked, it will be almost impossible to get a sufficient quantity of the serum to carry this out thoroughly; it is still difficult enough to obtain sufficient serum to treat actual cases of diphtheria. I believe some of our American friends may have heard of the cases that have been treated on most elaborate lines—young children in hospitals and foundations—where diphtheria has broken out, in which the most startling results have been obtained as regards the prophylactic use of antitoxin serum.

Dr. J. MACINTYRE: Mr. President and Gentlemen,—In discussing such a subject as the therapeutics of diphtheria, with special reference to antitoxin, one cannot but feel that at this time of day a speaker is placed at considerable disadvantage owing to the fact that comparatively little that is

new has recently been evolved, and for the most part all the points of extreme interest have been discussed in nearly every association in this and other countries. There is one advantage, however, and that is as time goes on one is placed in a better position for forming an estimate of the true value of this therapeutic agent. The subject is one of particular interest to me because, as the Fellows of this Association well know, for a considerable number of years I have been engaged in the study of the etiology of all the acute affections of the nose and throat, and it is now something like four years since I had the privilege of bringing a series of papers before the Association, the object of which was to point out the necessity for careful investigation of the non-pathogenic as well as the pathogenic organisms found in the auro-nasal cavities. During these four years vast strides have been made, and great improvements have taken place in the methods of diagnosis. Moreover, the importance of the subject has been emphasized by the founding of institutes with the object of affording special opportunities by which to arrive at an early diagnosis. Some of the Fellows here present may remember that at the Nottingham meeting of the British Medical Association some years ago I also suggested that such facilities ought to be afforded medical practitioners, and it has been with considerable pleasure that I have noticed the great advances in this direction, not only in England, but particularly in America, where the magnificent work of Drs. Hallock Park and A. L. Beebee will stand as models of scientific work reflecting at the same time considerable credit upon those in charge of the medical departments on the other side of the Atlantic.

In my capacity as editor of the British JOURNAL OF LARYNGOLOGY I have had many opportunities of studying carefully the advantages and disadvantages of this new method of treatment, as shown in the current literature. As is not unusual in these cases, scientific thought seems to be divided into two channels, one in which the new method has been largely vaunted, and another in which it is only fair to say it is viewed less hopefully. Notwithstanding all the hopeful deductions from experiments upon animals, and the preliminary injections upon human subjects by those who were favoured with specimens of the serum, it is only right to say that even now a considerable number of investigators have not yet formed opinions upon the exact value which this new remedy is entitled to claim, and judging from the literature and expressions of individuals at our disposal it is at least fair to say that unanimity of opinion has not been obtained. But it is quite certain that the profession as a whole would not at present accord to this new agent an unqualified reputation as a specific, such as mercury enjoys in syphilis, or even quinine in ague. It is not my intention to dwell upon the clinical experience which has come under my own personal observation, because I feel that a considerable period of time must elapse before anything definite can be said.

Like every other practitioner I have used this new remedy, although not in sufficient numbers to form a basis for dogmatic or definite opinion on the subject.

In the first few cases the results were so good that I was inclined to

be exceedingly hopeful. In one of these the child was in grave danger, and the medical attendant with whom I had been called in consultation, to use his own words, said, "My whole experience points to a fatal termination of this case, and speedily." We injected antitoxin very freely and repeatedly, and twelve hours afterwards I was called upon to perform tracheotomy in what I considered one of the most hopeless cases I ever attempted. This child recovered. A similar experience occurred to me in the practice of my friend, Dr. Anderson Robertson, of Glasgow. Both of these cases were exceedingly grave, and in each tracheotomy had to be performed. A more extensive experience of the remedy, however, did not quite bear out my earlier impressions, and, to put it in a word, my mind is yet open to conviction. If it be true, as Mr. Browne says, that after a careful trial the treatment has been abandoned in one of the Metropolitan Asylums' Board hospitals, we have a very damaging fact placed before us, because I do not suppose that anyone will doubt the serum got a fair trial there. I was delighted this morning to hear the masterly address from Dr. Woodhead, because of the lucid manner in which it was delivered, and also because of its freedom from a certain bias sometimes exhibited by those whose facts come from the pathological laboratory. It sometimes happens that the opinions expressed by pathologists or bacteriologists do not quite coincide with those noticed by clinical observers. In this direction, therefore, I was pleased to hear Dr. Woodhead's views upon mixed cases, because I have never recommended the treatment in such cases where there was not distinct evidence from bacteriological research that we were dealing with pure diphtheria.

In spite of all bacteriological investigation and laboratory research, I think we are entitled to say that, unless the theories of immunity from this agent fit in with clinical observations, the scientific position of the matter is to refuse unqualified assent until the discrepancies have been carefully explained away. For example, assuming that the blood-serum which we are now using is derived from pure cultivation of the Klebs-Loeffler bacillus, and assuming, in the second place, that Behring's theory is true, one would, of course expect that immunization would take place in people affected with a disease due to the presence of Klebs-Loeffler bacillus and its poisons only. But we know that a considerable number of the cases which are brought under our observation not only show Klebs-Loeffler bacillus in cultivation, but some forms of organisms usually associated with the suppurative processes. To this moment I do not see how Behring's work explains away this difficulty, nor can I see yet, from his own theoretical standpoint, how any person can be immunized by the injection of the process of Klebs-Loeffler bacillus when, it may be, that the local and more severe symptoms are not due to such, but to the presence of organisms totally distinct from, and producing a completely different series of clinical phenomena when present in the individual.

First of all, as to the theory involved in Behring's claim, Dr. Hausmann, of Berlin, has very properly pointed out that Behring rests his therapeutics upon the basis that the cure of the infective disease

was really a process brought about by self-immunization, but he very significantly adds, "this is a theory, not a fact." Behring believes further that human beings can be immunized by the blood-serum of immunized animals, and Dr. Hausmann says that experiments made in that direction have not yet been proved.

Now, coming to the advantages, I must say that I have been impressed by the criticism of Mr. Browne when he pointed out that he did not see how anyone could get away from the fact that, both at the bedside and *post-mortem*, we had distinct evidence of mischief turning up in the course of the injection which would not have resulted if the serum had not been injected. The question arises to-day, Are we to use blood-serum in the face of recent statistics? If there be disadvantages, it is only fair to point out where they may exist—for example, they may be intrinsic. I have seen specimens of blood-serum and results in which I have not the slightest doubt the serum was not good. We should be exceedingly careful in not being misled by statistics. Dr. Moizard, of Paris, in a very able paper begins by stating that at his hospital the conditions were so bad in the treatment of diphtheria that the surgeons were on the point of refusing to treat cases. Improvements were made in the administration, and, of course, the results were better from that alone. The tendency is now to send patients earlier into hospital, and the result is our contagious departments will be filled with patients who have really only a milder form of the disease, and, therefore, likely to recover. One is bound to say that the very fact of so much attention being drawn to the cases of early diagnosis statistics will naturally be increased on the right side. However, we cannot get over the fact that, if it be true that in the laboratory and elsewhere they have come to the conclusion that immunity can be obtained, and even if the statistics are not what we would like, surely there is enough said to create a feeling of hope that, by improvements in methods of diagnosis, in methods of preparation, and improvements in administration and dosage, some useful practical result will be obtained.

Dr. DE ROALDES: Mr. President,—It is quite refreshing to listen to Mr. Lennox Browne's remarks on the question of the treatment of diphtheria by antitoxin. He is not the only one who maintains that this method is not calculated to supersede the older modes of treatment. We are hearing from some very good men who claim that antitoxin is less effective than generally believed, or even that it does not give much better results than other classical methods of treatment. The experience at the North-Western Hospital, where it is an open secret that the use of the serum has been abandoned, is a subject for serious consideration. As a matter of fact we must thank the observers who boldly point out the desiderata of the new treatment, and who strive to place in relief all possible sources of errors in the statistical returns. Still, I do not see that the facts, statistics and arguments advanced by these gentlemen are sufficient to counteract those brought forward by hundreds of observers from the four corners of the world. I would like to call Mr. Lennox Browne's attention to the report just published, of a medical commission in New Orleans, over which I had the honour to preside, and which was

appointed in order to test the merits of antitoxin. He will see that in their experimentation the rules of treatment established by this commission cover some of his objections to the statistics of other observers. I mean to say that there was no selection of patients, no refusal to inject at any stage of the disease; the cases were treated under ordinary hygienic conditions of general practice as met with in the homes of the poor or of the rich, without trained nurses or the refinements of modern hygiene, which might be claimed as invalidating some of the results obtained with antitoxin.

In most cases all other treatments were, according to the instructions of Dr. Roux, carefully avoided, and the observation sheets made to cover a period of thirty days. The mortality list includes those injected when moribund, and even a case of accidental death. Any practising physician could have his patient injected in consultation with the clinical committee of two, and provided his case had been reported as true diphtheria by the bacteriological department of the Board of Health. Under these conditions the death-rate in 100 cases treated by antitoxin did not exceed 8 per cent. This proportion has been kept up in 150 cases treated subsequently. According to the report of our statistical committee, between 1887 and November 1894, the total number of cases of diphtheria recorded in New Orleans was 2770, with 1008 deaths—36·39 per cent. In 1894 to November 18th, the recorded cases were 332, and the deaths 106, say 32·22 per cent. From April, 1894, at which time the bacteriological laboratory of the Board of Health was established, the number of cases bacteriologically examined to November 18th was 168, and the deaths 37—22·02 per cent. The number of cases not so examined was 164, and the deaths 69, a mortality of 42·07 per cent. The figure 22·02 per cent., the rate of the cases bacteriologically examined, afforded the fairest comparison with the rate obtained in the 100 cases treated with antitoxin, but even so it showed that its use cut down the prevailing mortality to almost a third, viz., from 22·02 to 8 per cent.

As regards the question of rashes, eruptions of a very mild character have been observed in 12 per cent. of the cases. Concerning the duration of the disease, the shortest time was three days, and the longest thirty-two days. The average of all cases was nine days and eighty hundredths of a day.

In conclusion, I would say that in antitoxin I consider we have a ready means of diminishing the mortality of diphtheria. We must understand, however, that everything is not said on the subject, and that we shall meet with some disappointment. The enthusiasm has been too great at the beginning, but I am convinced that antitoxin has come to stay as a medication of great and powerful effect in the treatment of diphtheria.

Dr. DALY : Mr. President,—While I am very hopeful as to the future of the diphtheria antitoxin serum, I am not of the opinion that we have arrived at that point where we can afford to burn our bridges behind us, so to speak, with reference to the older treatment. I have allowed some of my enthusiastic assistants in the wards of the Western Pennsylvania Hospital at Pittsburg to use the diphtheria antitoxin serum, but I have

not permitted them to depend on that exclusively. I have for many years been in the habit of using the calomel treatment pure and simple. This calomel treatment consists in administering—say, to a child of two or three years old—from two to three grains of calomel every two or three hours, unmixed and untritured, and simply floated upon a teaspoonful of water; in administering it regularly until you have procured a peculiar condition of the stools, which resemble pea-soup—they are greenish, and after a few evacuations you will find them containing some masses very like the polypi observed in the water troughs by the roadside in the country. The treatment is very simple, but it is quite efficient. When the condition referred to has been procured, then the dose of calomel should not be diminished, but the interval increased. I have been in the habit of practising this treatment for fifteen years. It is not original with me. It was pursued by Dr. Reiter at Pittsburg for twenty or thirty years. He never wrote much upon it, and his colleagues paid little respect to it, because it was said—without truth, however—that he gave calomel for everything, and that he was fond of giving two medicines, calomel and bicarbonate of potash, and what one would not cure the other would. Just before his death I put a lot of my patients on the treatment, for we had then an epidemic of diphtheria at Pittsburg. My results were good, except that I had made the mistake that many others made in those days—not to guard against heart paralysis. I lost some of my patients during convalescence by the mothers taking them up from the crib to carry them about the house and to the windows. There are many points about this treatment that, if gentlemen will only give it a trial, will, I am sure, prove to them that it is not only valuable in its results, but is most charmingly easy in practice. You have no fighting with the child; you simply sprinkle a powder of two or three grains upon a spoonful of water, and it takes it without any trouble at all.

It would not do for us to consider calomel in any sense a poison. I have had so large an experience that I cannot regard it as in any way dangerous. I had just got through one case before coming on ship board—that of a woman, thirty-eight years of age, who had taken five grains of calomel every three hours for twenty-seven days—and, if it is considered in any sense a poison, it must be very like the poison spoken of by the aged seaman, who said it was a poison, but a very slow one.

Dr. WOODHEAD: Mr. President and Gentlemen,—At this late hour I shall certainly not occupy much of your time, but there are one or two points I should like to take up, whilst I should also like to traverse some of the observations that have been made.

The first point that strikes one is that, in taking statistics it is not fair to any method of treatment to select a few special cases, as you must look upon 100 or 150 (unless they are most accurately observed and tabulated), and to argue from these to generalized statements. We now have at our disposal a very large amount of statistics, and as Mr. Lennox Browne pointed out—of course, in favour of the position he defends—it is very easy to be misled by a few statistics, as in those cases mentioned where there was a mortality of only four per cent. In the same way, we are not prepared to assume that they would be able in New

Orleans to keep up that mortality percentage of eight, when a larger number of cases comes to be dealt with. We must, of course, take these as isolated facts and as single contributions to a very wide and far-reaching subject. Now we have, as we have been told, undoubtedly gained much in the way of improved methods of the treatment of cases, simply from the fact that men who have been trained to deal with exact and experimental work have been called upon to treat patients where they considered that the conditions were not favourable for carrying on an experiment, and if the antitoxin serum treatment had done nothing else than to call attention to the great necessity that there is for improvement in the condition of patients a great point has been gained. But the improvement such as one would expect from the mere alteration of surroundings must have been a gradual one, whilst we know that a sharper line of demarcation exists between those treated on the classical method, on the one hand, and those treated by the new method on the other. We are told that we get better results, because we have better conditions; then the better conditions must be put down to those who have been trained in accurate experimental work, and who are not prepared to carry on experiments on a large scale without having such conditions as they think are necessary for treatment. I, for my own part, however, for the reason given above, cannot assume that the whole of the successes are due to these altered conditions. The homes are the same, the general conditions of the patients are the same, and it is only when they come into hospital that we have the altered conditions and the better results. These points, I think, should be borne in mind when we are considering statistics.

The serum treatment cannot be looked upon as supplying everything for the treatment of a patient, and no sane individual, who pretended to be able to treat diphtheria, would assume for a moment that he was not to do everything else in his power, and to take everything from the classical method of treatment—I am not speaking of drugs merely—that had been proved beneficial, and use it along with antitoxin serum. No one would assume for a moment that all other things are to be swept aside simply because something has been found that is undoubtedly useful in the treatment of cases of diphtheria, and, therefore, I should like it to be understood very thoroughly that I do not hold up antitoxin serum as a panacea for all cases of diphtheria. It must be used with discretion, after careful observation of the facts of the case have been found to indicate its use, and only in such cases, and only by such discrimination, are we able to secure good results from this or any other method that is recommended by authorities however eminent.

One other point. In connection with renal changes in cases of diphtheria I for a long period had to make *post-mortem* examinations on a very large number of cases of diphtheria, and the condition of the kidneys (this was before the antitoxin serum treatment was thought of) was so definite that they were always put down as “diphtheria kidney.” We recognized the condition of nephritis in these cases of diphtheria, which was apparently due to the attempt of the kidney to excrete the toxin products, and, as a result, we had an inflammation of the kidney

which was always exceedingly well marked, even when the clinical symptoms during life had not led the physician to believe that there were any very definite changes in the kidney. It may be pointed out that Roux and several German observers (who have had similar experience) find that, when albuminuria occurs as the result of the action of toxin on the kidneys, if the antitoxin is pushed the amount of albuminuria is diminished—that is, the toxins are so antagonized that they lose their stimulating power on the kidneys to a very great extent. And, although it is quite true that, under certain conditions, if you inject a large quantity of albumen directly into the blood, or a still larger quantity into the subcutaneous tissues, a certain amount of that albumen will come out through the kidneys, the effect produced on the toxin, and thus directly on the tissues of the kidneys, is so great that less albumen is excreted as the result of the action of the toxin, and there is thus a very great balance in favour of the patient. This is not merely a matter of theory, but is now so well recognized that the antitoxin is given in larger and still larger doses in order to diminish albuminuria.

Mr. Lennox Browne pointed out that a large number of cases of diphtheria are admitted into the hospital to be treated by the various physicians, and which are really not cases of diphtheria. Now that is a very important fact, because these cases, though not really cases of diphtheria, were formerly included by many physicians in their statistics. Taking the cases that come to us for examination (and although some of the men who see them evidently know a case of diphtheria almost the minute the patient is before them), certain hospitals receive cases certified as diphtheria which have really nothing in common with that disease. This condition of things is brought about, not through the medical superintendents at the hospital, but through the medical officer who certified these cases before sending them in. Of course, some people will be careful not to include the non-diphtheritic cases in their statistics, others naturally are not so careful. Every case not one of true diphtheria told in favour of the old method, whilst the new method, on the other hand, must suffer, from the statistical point of view, from the greater accuracy of diagnosis obtainable by bacteriological examination.

When speaking of the rise of virulence, I was not under the impression that we were teaching clinicians anything; I was only indicating that there might be some possible explanation of this rise and fall which no clinicians have yet been able to give. We have been told that it occurs in a very large number of diseases, but the thing is to find an explanation, and if such explanation can be found, it seems to me that the finding of a cure comes appreciably nearer. As regards the difference in the strength of the serum: there is no doubt that antitoxic serum may differ greatly as it is taken from different horses, but if twelve grains of any substance is to be given it may be given in twelve or in six ounces of water. It is possible to so measure the strength of any serum by noting its effects when given with certain doses of toxin of a definite power, that we are able to say whether twenty, fifteen, or ten cubic centimetres should be given. The administration of this substance is not the indefinite process that Mr. Lennox Browne appears to believe. It is possible to

determine with the greatest nicety the strength of the antitoxin, or rather its power of antagonizing any definite dose of toxin in animals, and, of course, if you can graduate the strength of the serum the required dose is readily calculable. We have got into a way of saying that twenty cubic centimètres are necessary, but most of those who are giving out the various antitoxins are quoting the strength, and it is then left to the man using the serum to decide how much he must give in any individual case. I should have liked to have said something more, but I will just state that so far as I know we have from fifty to sixty per cent. of those cases of undoubted diphtheria in which the long bacillus is present, which are pure cases and have *practically* no other organisms in the throat. Of course, in almost every case we can find a few organisms, even streptococci and staphylococci—you cannot take anything from the mouth without finding a number—but so few that they are comparatively unimportant, and may be left out of consideration. Of course, on the other hand, staphylococci and streptococci are sometimes so numerous that it is almost impossible to find the diphtheria bacilli even when present. Between these two groups are what may be termed mixed cases, which are really less numerous than many suppose. In conclusion, gentlemen, I must thank you most heartily for the exceedingly kind way in which you have received my somewhat disjointed and very incomplete remarks.

MR. LENNOX BROWNE asked Mr. Woodhead whether he could give any statistics as to the proportion of pure diphtheria to mixed.

DR. WOODHEAD, in reply, said about sixty per cent. were pure diphtheria.

MR. LENNOX BROWNE: That appears a very high estimate,¹ but before this discussion is finally closed I should like to move a vote of thanks to Dr. Woodhead, and that will give me the opportunity of making one more remark about the employment of adjuvant measures in these cases. For example, in those that were brought here last December by Drs. Washbourne and Goodall, it was distinctly stated that no other treatment except syringing the mouth with warm water was used, and that, except in cases of extreme weakness, no stimulant was given. It is also clearly understood that Roux is exceedingly careful to limit his methods to the mildest antiseptic irrigations, and that he does not use strychnine injections and stimulants in only small quantities while pursuing the antitoxin treatment.

DR. SAJOUS (Paris). *General Remarks upon the Infra-Glottic Space and its Stenotic Diseases.*

MR. President and Gentlemen,—Believing that we were to be favoured with a paper on the stenoses of the upper laryngeal cavity, I limited the article that I am to have the honour of presenting to you to the infra-glottic space. I shall afterwards have the pleasure of reading to you a paper by Prof. Massei, of Naples, which I think was to be read by title.

¹ In a series of eighty cases observed by Washbourne, Goodall, and Card, the proportion of pure diphtheria was 6·1 per cent. "Brit. Med. Journ.," Dec. 22, 1894.

In one hundred and sixty-three cases under Prof. Von Ranke of diphtheria uncomplicated with scarlet fever or measles, a pure cultivation was obtained in twelve, otherwise in 7·3 per cent. "Lancet," Aug. 3, 1895.

I claim the privilege of reading it before you, in the first place, because my own paper is very short, in the second, because we all have such a high opinion of our friend that it would be but a tribute to take the advantage of an opportunity of bringing his name before you again.

The infra-glottic space has probably received less attention from laryngologists than any part of the upper respiratory tract. As a result, our knowledge of its disorders has been but slightly, if at all, increased since the well-known works of Rokitansky, Czermak, Schroetter, Gerhardt, Catti, and others were published about twenty years ago. This fact is especially to be deplored in connection with the class of diseases briefly submitted to your consideration in this paper.

The infra-glottic lumen may not only be compromised by all the stenotic disorders to which the supra-glottic cavity is exposed, but it presents pathological and symptomatic proclivities of its own. A lesion may give rise to hoarseness and other vocal symptoms in one case, while the same disorder in another case will only occasion dyspnœa. Œdema in this situation being slow to subside, a slight cold while the process of absorption is progressing will suddenly develop the most alarming symptoms, and require tracheotomy.¹ An individual presenting slight dyspnœa during exertion as a unique symptom may all at once, without premonitory warning, become the prey of intense dyspnœa, and pass away unless immediate relief be at hand, the subjective manifestations being such as to suggest remote disorders as the cause of death. A neoplasm may grow insidiously in this situation and cause no alarm until very large, when the unsuspecting patient is suddenly asphyxiated unless tracheotomy afford immediate relief. As may be seen, infra-glottic disorders are singularly treacherous, as far as life is concerned, and it is quite likely that in the great majority of cases they remain unrecognized.

The structure of the infra-glottic tissues and their intimate relationship with those of the larynx proper, readily explain their involvement in the diseases of the latter, and the fact that the infra-glottic region presents disorders of a special type. In the first place, its sub-cricoid or upper portion is remarkable on account of the thickness of the mucous membrane, the submucous connective tissue layer, and the size of the underlying muscle. Fraenkel recently,² and very properly, I think, expressed his opinion that the vocal cords should be considered as constituted, not only of the inferior thyro-arytenoid ligament, but also of the subjacent muscular bundle, each cord being thus composed of the entire prismatic mass projecting from the lateral wall of the larynx. This being the case, what might be termed the "vocal promontory" may be said to form the wall of the infra-laryngeal space on each side, the truly laryngeal portion being comparatively very small. This led Masse, of Bordeaux,³ to state that lesions usually considered as glottic should in reality be considered as subglottic.

As far as exposed surface is concerned, the difference is even greater,

¹ See case reported by Lacoarret in the "*Annales de la Polyclinique de Toulouse*," Nos. 4 and 5, pp. 60 and 63, 1894.

² "*Archiv. für Laryngologie und Rhinologie*," Bd. 1, Heft 1, p. 250.

³ "*Gazette des Sciences Médicales de Bordeaux*," June 10th, 1894.

the width of the upper portion of the prismatic mass, the vocal cords as seen in the mirror, being one-fourth greater than the infra-glottic portion is high. The infra-glottic space, however, is the more protected of the two, and it is much less exposed to traumatic lesions and to the influence of conditions likely to produce irritation by contact than the laryngeal or upper portion of the prismatic mass. Again, the anatomical structure of the latter becomes less complex as its lower or cricoid limit is approached ; its physiological and pathological attributes are thus gradually reduced from above downward.

But other conditions—which, I may add, are usually overlooked—tend to increase the morbidity of the infra-glottic region. As the upper limit of the trachea, it receives the brunt of the expiratory current during hemming and coughing, and, the cords being approximated when these acts are performed, dust-laden, mucoid or muco-purulent sputum lies in contact with its surfaces longer perhaps than with any other portion of the tracheo-laryngeal tract. More important, however, in this connection is the peculiarity of its mucous membrane to form creases or longitudinal folds when the cords are not in extreme adduction. Upon the integrity of this crease-forming quality greatly depends the character of the voice. The importance of this fact may readily be appreciated in every-day work. In the treatment of singers, for instance, local applications including the infra-glottic space and calculated to reduce congestion and irregular traction upon the edges of the vocal cords, will be found to control much more readily a case of hoarseness due to an acute, sub-acute or chronic disorder than if the same application is limited to the upper laryngeal cavity. As soon as the regular formation of creases is interfered with, the tension upon the vocal cords becomes excessive or irregular, and there is added to the catarrhal or other anomalous local conditions present one of even greater mechanical moment. In this lies the clue, it seems to me, to an explanation of the inherent peculiarities attending the differential symptomatology of the region. A perusal of carefully-reported cases will show that an infra-glottic disorder will give rise to hoarseness from the start if it is located over the muscular portion of the “vocal promontory,” and that, if it is situated lower down and over the cricoid ring, the first symptom to appear is dyspnoea upon exertion if the disease be one of a stenotic type. The muscular or doughy portion of the infra-glottic region being easily distorted by a local pathological process, we naturally have concomitant distortion of the glottic edge and hoarseness as a result. Over the cricoid ring the absence of loose submucous areolar tissue prevents traction upon the parts above, and a growth of any kind in this region may develop surreptitiously and cause no trouble until the tracheal lumen is all but occluded.

Two important *desiderata* are, it seems to me, suggested by the above remarks : (1) That the infra-glottic region merits serious study. (2) That when the cause of dyspnoea upon exertion cannot with certainty be determined in a given case, the patient should at once be submitted to a careful infra-glottic examination. A diagnosis of asthma could not, with fairness to the patient, be considered as complete now-a-days unless an examination of the nasal cavities be made. The same may be said

of the laryngo-tracheal tract. If an asthmatic is asked where the oppression seems to be the most marked, he will almost invariably point to the infra-glottic region. Of course, we all know the part taken by the lungs in asthma, but the truth remains that infra-glottic asthma has been taken for the classic form, and treated as such to the great detriment and danger of the patient. How death may suddenly be brought on in these cases will be shown later on.

Tumours of the infra-glottic region are thought to be comparatively rare. The truth probably is that unless they coexist with supra-glottic growths, they are seldom brought to the notice of the laryngologist. Even when they are, approximation of the vocal cords during laryngoscopic examination, coupled with the integrity of the voice when the neoplasm is low, may prove completely misleading. Again, the sub-cordal tract may not easily be visible at first notwithstanding the use of a powerful light and a large laryngoscopic mirror, owing to a peculiar conformation of the larynx, the location of the growth, its shape, and colour, etc. We are thus brought to a position in which we may encounter one of the gravest features of uncertain differential diagnosis. When a diagnosis cannot readily be made in these cases we are likely to suspect, when a certain class of symptoms appear, a syphilitic origin, or under the guidance of other diagnostic features, asthma. In both of these disorders iodide of potassium is our mainstay, and we administer it for diagnostic purposes at least. If a growth be present it affords in itself, as already stated, considerable danger, and may at any moment cause suffocation; again, the liability of iodide of potassium to induce œdema of the upper portion of the air tract is well known. We thus unconsciously administer what to the patient is probably the most dangerous remedy at our disposal. A case reported by Jonathan Wright, of New York,¹ shows how suddenly asphyxia may thus be induced. The growth was of sufficient size to almost occlude the lumen of the trachea; nevertheless, dyspnœa was only evident during exertion or coughing, no difficulty being experienced when the patient was quiet. The sufferer was admitted into Roosevelt Hospital, and given iodide of potassium in increasing doses for diagnostic purposes. After a few days, signs of iodism began to show themselves, and dyspnœa of so intense a nature suddenly appeared that the patient was only saved by tracheotomy, artificial respiration, and hypodermic stimulation.

There can be no doubt that fatal cases of unrecognized infra-glottic stenosis are occasionally, at least, recorded in the death registers as victims of asthma, heart disease, aneurism, apoplexy, etc. Our specialty, as guardian of what might be called the "portal of life," has already done so much to reduce the proportion of such errors that it can well afford to advance one step further. To include the infra-glottic space in all laryngeal examinations as a routine practice would afford increased opportunity to elucidate obscure questions, enable us to enhance our pathological discrimination, and increase the sphere of our remedial powers.

¹ "Journal of the American Medical Association," Sept. 26th, 1891.

therefore beg to submit the following conclusions :—

1. The infra-glottic space has not received the attention its importance as an inherent portion of the larynx warrants. As a consequence, the part it plays in connection with the diseases of that organ is still insufficiently appreciated, and the disorders to which it is itself liable have not as yet been clearly differentiated. All examinations of the larynx should include the infra-glottic space. *

2. The forms of stenosis peculiar to the lower infra-glottic region present features of unusual danger, and symptoms likely to be ascribed to disorders in which iodide of potassium is usually administered.

3. Iodide of potassium greatly increasing the dangers of infra-glottic stenosis, it should not be administered in a case presenting dyspnœa as a symptom unless the non-existence of stenosis be ascertained by infra-laryngoscopic examination, or the causative disease be clearly recognized as independent of the respiratory tract.

4. Preliminary tracheotomy should be performed when iodide of potassium is to be administered during the existence of advanced infra-glottic stenosis.

5. The treatment of laryngeal disorders involving the glottis is more effective when the infra-glottic region is considered as a part of the diseased area.

Prof. MASSEL.—*The Treatment of Chronic Laryngeal Stenosis.*

This paper was presented (and read for the author by Dr. SAJOURS. See JOURNAL OF LARYNGOLOGY, Aug. 1895, p. 567).

DISCUSSION ON LARYNGEAL STENOSIS.

Dr. BRYSON DELAVAN (New York): With regard to the treatment of chronic stenosis, a great advance has been made from the introduction of the O'Dwyer method of intubation. It may be applied in a very wide variety of cases. The method is very simple, easy for the surgeon to carry out, and is so much better tolerated by the patient, that there can be no question that it is superior to the old way. The toleration of the larynx to the tube is, of course, well known, and this very factor in the treatment of these cases at once places the method decidedly in advance of the older plan. The variety of cases to which intubation is applicable is also very extensive; it is useful, not only in chronic stenosis of various forms situated above the glottic region, but it is admirably calculated to do away with some of the cases of subglottic stenosis. In those interesting cases known as "web" of the larynx a tube has been known to destroy the web without any further dilatation being required. The operation which has sometimes been performed for the removal of a laryngeal web is certainly a very much more severe one than that of simple introduction of the tube—in other words, splitting the thyroid and dissecting out the offending membrane. In the treatment of several of these cases lately reported the web has not even been incised, but the tube has been introduced and a connection effected in that way. Of course, in some of the more severe forms of cicatricial stenosis the larynx may be

so disorganized that even the long wing of a tube will not avail in producing the necessary dilatation. In many of these cases even the cicatricial bands may be divided and fragments of tissue removed, and the fine tube then introduced. I think that it is certainly a great advance upon anything we have heretofore had, and there are very few cases in which it is not applicable. There are some cases in which it does not apply, and where incision into the trachea below the glottis is, of course, necessary, but, taking the cases as they come to us, the latter are certainly in the minority.

Dr. MACINTYRE said : I have had a considerable number of cases of laryngeal stenosis under my care, and I think all such can be divided into two great classes, one in which there is no difficulty in deciding upon a method of treatment, and the other in which there is the greatest difficulty, the result often being of an unsatisfactory nature both to patient and surgeon. The Council has decided to limit this discussion to chronic laryngeal stenosis, and so a large number of cases of stenosis—the result of simple inflammation, or those occurring in the course of diphtheria, or the exanthema—must be excluded. It must be remembered, however, that surgical interference in chronic laryngeal stenosis is often only sought when acute symptoms have supervened, a condition, for example, frequently present in specific disease, and consequently to a limited extent these conditions must be taken into consideration in all treatment coming under the second or less-satisfactory heading. Nay, more, a glance at our literature shows that when a surgeon speaks of acute stenosis he means a chronic ailment in which the symptoms have become urgent, and so to a certain extent some little confusion may arise. The great majority of cases which I have been called upon to treat have occurred low down in the larynx, either in the region of the true or false cords, and still lower down than that in what we regard as the narrowest of the larynx. On approaching the subglottic region serious and difficult cases also come under observation. So it happens that when looking into a larynx falling under this class we may find cicatricial contraction in one case between the epiglottis and ary-epiglottidean folds, in the other, unilateral contraction; the whole lumen may be encroached upon by inflammatory thickening or a growth of fibrous tissue, or we may have actual growing together of tissues producing an infinite variety of oblique contorted ring-shaped or geometrical figures, with which those accustomed to the use of the laryngeal mirror are quite familiar.

As a natural result of all these with or without ulceration, congenital or acquired, we have the extremely difficult cases to which our distinguished president has paid so much attention, viz., webs, and for which we are so much indebted to him for the famous instrument associated with his name, and so familiar to us all. This is a branch of the question about which we have yet much to learn. A consideration of the causes of stenosis emphasizes in a marked way what I have already stated, viz., that a large proportion of the cases of laryngeal stenosis which come under our care, putting aside minor differences of various operators, present comparatively little difficulty in coming to a conclusion as to the best methods of treatment. For this purpose I would set aside in any

remarks which I have to make all consideration of narrowing of the glottis of a traumatic nature, or those due to intra- or extra-laryngeal neoplasm, whether benign or malignant, primary or secondary, or producing mischief directly or by indirect pressure on the nerves, and confine myself to stenosis in chronic cases of constriction. When we have done this we find ourselves face to face with questions of a most difficult nature, a consideration of which, doubtless, induced your Council to elicit as far as possible the knowledge and opinion of the Fellows at this time.

Looking back upon the history of the cases which have come under my own observation a great many of them required the operation of tracheotomy as a matter of expediency, and, secondly, as an aid to further treatment in the case. It must be confessed that giving all due weight to the instruments of such men as Mackenzie, Schroetter, Heryng, O'Dwyer, and many others, and regarding in the most favourable light the many ingenious instruments which have been placed at our disposal, the alleviation has proved in my hands of a very unsatisfactory nature. I have had the privilege in Vienna under Prof. Schroetter, and in Paris under Dr. Gouguenheim, of witnessing demonstrations in which the patient was taught to pass vulcanite tubes of various kinds through the laryngeal orifice, and I have myself been able to train a patient in one instance at least to do this with considerable success. I must say, however, that in no severe and advanced case as yet have I had the satisfaction of carrying the proceedings to such an extent as to enable the patient to dispense with his tracheotomy tube. I do not wish to be misunderstood, and to give an impression that in no case where dilatation was practised have I got rid of the tracheotomy tube, but I say in old and bad cases this has not been my experience, and in more than one case I have seen a good deal of irritation follow the operation. This difficulty, of course, is in precise accordance with experience in every branch of surgery because, just as we have difficulty with cicatrices elsewhere, so we have in our special branch only infinitely more difficulty from the anatomical position of the cicatrices, granulations, or fibrous tissue, with subsequent contractions.

Sometimes our efforts are rewarded however, and I can recall one case at least of very obstinate specific catarrh, the patient, an officer in the Anchor Line service, in which after dilating with O'Dwyer's tubes for a period of nearly two years the tracheotomy tube could be removed, the voice had returned, and a most successful result was lost simply because the man died of an acute attack of pneumonia during influenza.

Administration of particular remedies, such as iodide of potash, may temporarily accelerate the local conditions, with increase of the stenosis, say from oedema. When we pass to severe measures my experience has been that the difficulties increase with tremendous rapidity, although, after all, they are but of degree, and it is just in these cases that the surgeon is apt now and again to become disheartened, and to include the lesser in the greater, and so miss a successful issue where such might have been obtained. A careful study of such cases emphasizes the general lesson which is being taught in every other domain of surgery, viz., a careful and thorough study of etiology, with a view to prophylaxis at a favourable stage, and the speedy and thorough restoration to function

by well-chosen surgical procedure. But while this is the darkest side of the question to take up, the same lesson holds good in our own region as well as in our own branches of surgery, viz., that these intractable and difficult cases, if we exclude such terrible things as those of traumatic origin, are for the most part lesions which come on late in the course of disease, often the result of neglect, at a time when interference was not only possible but likely to be valuable, and consequently I think two lessons are at least to be learned in these cases, viz., the importance of early intra-laryngeal inspection, and vigorous treatment of a local and constitutional nature at the earliest part of the affection, and secondly, that the local measures ought to be perseveringly carried out, and for a considerable period. With regard to the former the surgeon not only has to consider the question of rest, but in many instances the advisability of judicious movement, it may be on the part of the patient, or it may be combined with help from the surgeon. Further, every tendency to thickening, œdema, ulceration, or suspicion of fibroid thickening demands our attention at the very earliest period. One need hardly say further that the majority of these causes, depending as they do upon an affection such as syphilis, can be helped at an early and proper period by prompt constitutional remedies, although even the administration of this last measure has to be watched.

Dr. SAJOURS : I have nothing further to add. I would simply ask you to accept the suggestion to include the infra-glottic space within the scope of your future laryngeal examinations. I could have lengthened my paper very much by citing cases in which death was very nearly approached. I merely state this to emphasize the fact that we would not only be doing ourselves justice, but also our duty towards our patients, by including the diseases of the infra-glottic space within the sphere of our serious consideration.

Dr. HILL : I should like to call attention to a little point that has not been mentioned. There is always a good deal of danger when an anæsthetic is administered. I have had a case during the last twelve months in which the patient, a very old man, aged seventy-nine, nearly died on the table, under the administration of ether. Another patient was under my care for stenosis of the larynx, with a good deal of sub-glottic thickening, and when he got better he was operated on by a surgeon for fistula. He was given ether, and the spasm was so great that he very nearly died. Of course, had I known that the patient was going to be operated upon, I should have pointed out that ether was a very bad thing to give in any such condition as subglottic thickening. It is a question whether a patient ought to have an anæsthetic, or whether he had not better put up with whatever operative interference is required without one.

DISCUSSION ON THE SURGICAL TREATMENT OF LARYNGEAL TUBERCULOSIS.

The following papers read at the meeting were published in the JOURNAL OF LARYNGOLOGY, No. 8, Aug., 1895.

Prof. KRAUSE.—*The Surgical Treatment of Laryngeal Tuberculosis.*

Dr. THEODOR HERYNG.—*The Technique of the Surgical Treatment of Laryngeal Tuberculosis.*

J. W. GLEITSMANN, M.D. (New York).—*Surgical Treatment of Laryngeal Tuberculosis.*

Surgical treatment of laryngeal tuberculosis proper—viz., curettement with single or double curettes—has not received the attention, and has not as many followers in the United States as it has in Europe. Preference is largely given to milder methods of treatment; and, although the advocates of surgical measures meet with due consideration and appreciation of their work, curettement has not yet gained a firm foothold among the laryngologists abroad. I shall not venture to enter at length into the reasons for this seeming indifference or aversion, but the disinclination does certainly not arise from a want of recognition of the excellent work done by others; nor is it due to tardiness to adopt advances made in science on this side of the ocean, proofs for which are not wanting. It is also not timidity on the part of the operator, a statement which I do not think necessary to substantiate in the face of the brilliant achievements surgery has accomplished in the United States. But I may briefly mention two reasons which, although given only as my personal opinion, I heard stated in conversation with my colleagues. A great number of the latter are averse to harsh measures, and dislike to inflict pain and discomfort on their patients; others, again, with better claims, point to the small percentage of patients cured by curettement. To the former class of our colleagues we cannot deny the right to treat their patients with milder means, as long as they can prove that the remedies used improve or cure a certain number of patients. To the latter we must endeavour to show that curettement, in properly selected cases, will yield better results than other methods of treatment.

Curettement is so important a measure, is a proceeding so opposite to views hitherto held, that it is not surprising that, when once adopted by an operator, he is carried away by enthusiasm, and is tempted to extend the field of his operations to cases which had fared better with another method of treatment. By this remark I do not wish to insinuate that a careful selection of patients had not been made by the advocates of curettement, but it is my belief that the operation will win more adherents among the profession when we exclude all unsuitable cases; further, when we bestow the most painstaking attention to the after-treatment; and lastly, when we give full consideration and care to general hygienic and dietetic treatment of the patients.

Laryngeal tuberculosis being a disease of the gravest order, and the indications for curettement being limited, it necessarily follows that the

number of cures resulting from it will remain small for some time to come. We often hear of the excellency of some new remedy for tuberculosis and of the cures effected by it, but I have yet to read a plain statement in figures of how many patients of the number treated have remained well after a reasonable length of time. In a recent discussion on this subject I remarked that not only statistics of cures of laryngeal but also of pulmonary tuberculosis are difficult to find in the literature. A few physicians and a few health resorts have published the results of treatment of their pulmonary patients. The references of laryngeal tuberculosis are still less satisfactory. My illustrious colleague, Dr. Heryng, had the courage to publish the records of his results by curettement, and has by his figures given a weapon into the hands of the opponents of this treatment, who are inclined to believe that the number of cases is too small to merit any serious consideration. As stated before, no publication of the results by other methods has come under my notice, and as long as such reports are not forthcoming comparisons of the value of the different measures adopted will be misleading. But, if statements of the condition of patients after a lapse of several years should be published later on, I am convinced that the results of curettement will not need to fear a comparative test, and will prove at least equal, if not superior, to other methods of treatment.

Although curettement, as the most modern and radical treatment of laryngeal tuberculosis, deserves our greatest attention, surgical treatment of this affection comprises several other procedures, which must be mentioned when reviewing this subject. Endo-laryngeal measures are—(1) incisions ; (2) curettement ; (3) submucous injections ; (4) electrolysis ; (5) galvano-cautery. Extra-laryngeal operations are laryngotomy, extirpation of the larynx, and tracheotomy. Finally, also intubation has been performed in laryngeal tuberculosis.

I have collected for another occasion the literature on these different subjects, as far as it was accessible to me, and, as I thought it might be of interest to some Fellows of the Association, I brought a copy of the references with me. You will see that it was an Englishman, William Marcet, who made the first attempt at surgical treatment, by puncturing tuberculous infiltrations as early as 1869, but who did not persist in his experiments. I found, further, that a Scotchman, P. H. Watson, of Edinburgh, made the first extirpation of the larynx for syphilitic stenosis. The first tracheotomy on account of laryngeal tuberculosis was made by the Frenchman, Valleix, in 1834. Extirpations of the larynx for tuberculosis were made fifteen times ; eight total, seven partial ones. Among them, three for supposed carcinoma ; two for lupus.

In a paper read last month before the American Laryngological Association I endeavoured to analyze and to refute the objection generally raised against curettement in laryngeal tuberculosis. I may be permitted to refer here briefly to some of the more important points stated in the aforesaid paper. It is not claimed by the operators who practise curettement that they will cure thereby a concomitant pulmonary complication, nor that they can prevent relapses, drawbacks which curettement has in common with other forms of laryngeal treatment. But it cannot

well be denied that if by curetting we improve or cure the laryngeal lesion, the patient will have a better chance to fight his pulmonary affection than when he suffers from both combined. Curettement, further, is in my opinion the quickest and most effective proceeding to relieve the distressing dysphagia resulting from tubercular infiltration of the arytenoid region. The pain of the operation can almost always be entirely subdued by applications of cocaine—either by applications with the cotton-carrier, or by submucous injections; and the wound, as a rule, heals rapidly under appropriate after-treatment. The resulting relief from dysphagia is of the utmost importance, as the patient is then enabled to again take proper nourishment, which is one of the most essential features in the treatment.

The limitations as to suitable cases adapted for curettement, are no valid reasons against its recommendation as a surgical measure. For almost all operations a line has to be drawn, beyond which it is not safe to operate, but this is no argument against an operation being justifiable in appropriate cases. By curetting a torpid tubercular ulcer, by excising tubercular infiltration in the larynx, we adopt sound principles of surgery and follow the example of the surgeon who excises tubercular glands, tubercular joints, etc. The disadvantages under which the laryngologist labours, the greater inaccessibility of the parts, the greater proclivity of relapses resulting therefrom, the greater difficulty of manipulation, do not detract from the value of curettement as a proper operative measure, but only make a greater demand upon the skill, perseverance and circumspection of the operator.

I think it is not in place for me to speak of the indications and the technique of the operation, as I anticipated that Dr. Heryng would treat these two subjects. I also have nothing to say in addition to that which has already appeared in print. I only beg to draw your attention once more to the propriety of a careful selection of the cases for this treatment. Although it is well-nigh apparent from the foregoing that I am a strong advocate of curettement, I have declined to operate in more than one case sent to my office for this purpose. I remember especially one patient who returned from a health resort with the avowed intention to have surgical treatment applied to his larynx. The upper lobes of both lungs were seriously affected; he suffered from hectic fever, and the infiltration of the left arytenoid region and ary-epiglottic fold was so extensive that the patient had scarcely been able to take any nourishment for several weeks past. The right arytenoid cartilage was also somewhat tumefied; there was complete aphonia, but no dyspnoea. It was impossible to remove the enormous tumour by curettement; besides such a step seemed to be unjustifiable, considering the patient's general dilapidated condition. Submucous injections of lactic acid were made, and in the beginning with the most happy result; but ultimately dysphagia set in again, and ten days later the completely necrosed arytenoid cartilage, with Santorini's cartilage attached to it, was expectorated by the patient, who died one week thereafter.

I never experienced any special difficulty in the performance of curettement with Heryng-Krause's double curettes, but found it advan-

tageous in some cases to employ slightly larger curettes, enabling me to remove at one stroke a greater amount of diseased tissue.

I also refrain from speaking of the results of curettement obtained by others, and shall only briefly allude to my personal experience. In the face of the large figures given by Heryng, Gouguenheim, and Krause—a total of four hundred and fifty-five patients—I feel somewhat embarrassed on account of the small number of my own cases, viz., twelve; having obtained Heryng's double curettes only about one year ago. Of these twelve patients three are dead, five are in *statu quo*, or have lost the improvement previously gained, and the balance of four are without recurrence of laryngeal disease from six to ten months; one of the latter number had affection of the posterior laryngeal wall, another of the ventricular band, and two of the arytenoid region.

But it is a source of satisfaction to me to be able to refer to one patient who is an analogue to Dr. Heryng's case of Mrs. Goldschall, and whom I treated and cured seven years ago with single curettes, galvano-cautery and lactic acid. As the case has been mentioned in the medical press on several occasions, I shall confine myself to the statement that the patient had primary tuberculosis of the pharynx and larynx: the lesion, beginning at the base of the tongue, ultimately implicated the left tonsil, the soft palate, the whole lingual surface of the epiglottis and the left ary-epiglottic fold. After five months of persistent and energetic treatment the ulcers healed and cicatrized, and with the exception of a slight relapse during the following winter the patient has remained in excellent health to the present day.

I cannot conclude my remarks without some reference to the work done by my townsman, Dr. Chappell. The doctor has treated patients with laryngeal tuberculosis, during the last year, with creosote solutions locally, as well as with submucous injections of creosote in an oily solution, and has devised a syringe for the latter application, which I have the pleasure to show you for inspection.

I have no personal experience with this method, having so far been satisfied with the effect of submucous injections of lactic acid; but, if the improvement reported and observed at the examination of his patients be a lasting one, this mode of treatment will certainly deserve a more extended trial to determine definitely its merits.

Mr. LENNOX BROWNE: My friend Heryng has asked me to say a word or two, and I remember that fifteen years ago, at Milan, I was invited to join him in a discussion on this question and that we two were then associated in its initiation with the lamented Krishaber. I have since tentatively and somewhat timorously pursued the intra-laryngeal surgical treatment of tuberculosis. Unfortunately, when I was in Berlin there was another method being tried which prevented me witnessing the success attending surgical procedure under Prof. Krause, for his treatment was then in abeyance in favour of tuberculin.

In England we have the same trouble in pursuance of surgery in relation to throat consumption to contend with as Dr. Delavan has remarked is the case in America. We have great difficulty to get our patients to submit to as radical measures as are carried on amongst the

Teuton race. And perhaps it is because women believe a little more in doctors than men, and more readily submit to advice, that we have had our best successes with female patients. In 1887 I operated on a patient who is still living. It was one of those cases—and these are among our greatest successes—where the patient had such pain in swallowing that she said she would sooner die by starvation than attempt to swallow; it was a case of extensive faucial and laryngeal tuberculous ulceration. Under curetting and lactic acid, and I do not believe that the acid itself is an atom of good without the curetting, the patient made a complete recovery and her lungs improved also.

It is worthy of note that in a large number of cases, if the lung disease is not far advanced, there is an improvement in the pulmonary disease, consequent on the improvement in the pharyngeal and the laryngeal conditions, and I feel sure I shall be borne out in this statement by Prof. Krause and Dr. Heryng. I would like to say also that my cases have been most successful where, after a short treatment which gives indication of a tendency to improve, the patients have been intrusted to the hands of another residing in a more favourable climate than that of London. I will just mention the case of a lady from Newfoundland. She, who with her brother, constituted the last surviving members of a very large family, all dead of tuberculosis, came to London, and having derived a certain amount of benefit from curettement, began to relapse. I sent her down to Bournemouth in 1892, confiding her to the care of Dr. Davison. She has never returned to Newfoundland, but I hear from Dr. Davison, who pursued exactly the same treatment as I had commenced in town, that the patient not only recovered her voice, but that she lost all pain in swallowing, with resulting improvement in nutrition, so that altogether we may look on that case as one cured, at any rate so long as she remains in a suitable climate. I have also had two or three other cases which have derived a like benefit under a similar course of procedure. I only wish that physicians at health resorts, especially those suitable for the tuberculous, would make themselves more familiar with the use of the laryngoscope, so as to be able to supplement the advantages to be gained from climate by adoption of such surgical measures as have this day been described, and have now taken their place as of incalculable therapeutic value.

In conclusion I would say that I have found so much benefit from curettements and lactic acid that I am, after the demonstration we have had to-day, quite prepared to go still further. I have felt hitherto, like Dr. Delavan, that there have been difficulties in the way with the patients, and not only with them but with their medical attendants, who sometimes raise objections to the surgical treatment of tuberculosis of the larynx, simply because the experience of their English *confrères* has not been held to be sufficient to warrant its employment. We shall all be greatly encouraged, I am sure, by the gratifying testimony of our visitors, Prof. Krause and Dr. Heryng.

Dr. LUC: I beg to say that for the last six years I have treated the greatest number of my cases affected with tuberculosis of the larynx with a certain method, and I am glad to say that after some difficulties I have

found my task more and more easy. I will be very short, because I think there is little to say after what we have just heard, and my chief desire here is to corroborate, from my experience, what my distinguished friends have just said. If we can but seldom cure our patients, we can nearly always relieve them, and there is a special case in which this task is easy, and I ask permission to direct your attention to this special fact, and I think that Dr. Heryng and Prof. Krause will share my opinion. I think the typical case in which we can be very useful to our patients, and stop their sufferings at once, is that in which we have to do with an enormous swelling of the arytenoid region, which prevents the patient's swallowing. These tumours can be easily extirpated, and we see a thorough change in the condition of a patient who the day before was unable to swallow a bit of bread. A second point I want to touch upon is what Dr. Heryng said about hæmorrhage in consequence of cutting the epiglottis. I have met two such cases, in which I had to deal with similar hæmorrhage from the epiglottis, and I recognize now that I went too far with my curetting, and, if I had kept myself within the limit prescribed by Prof. Krause, I should have avoided the accident I have referred to. In the second case, in which I had to deal with severe hæmorrhage, I could distinctly see the blood gush from one edge of the epiglottis. After several attempts to stop the blood by means of lactic acid, then by means of a galvano-cautery, I had recourse to another method—viz., the tongs. I passed a curved forceps, by means of which I was able to seize the bits of the epiglottis from which the blood came, and I left the forceps *in situ* for a quarter of an hour. The patient bore the pressure of the instruments very well, and, when I removed them after a quarter of an hour, I had the satisfaction of finding that the bleeding had thoroughly stopped. I am happy to say that this young man, who had an immense infiltration of the epiglottis, wrote to me a few months ago, telling me that he had gained ten pounds in weight, so I conclude his condition is greatly improved. The last point to which I would refer is in regard to technique.

I invented a few years ago a little curette for the special purpose of removing these little nodules from the vocal cords. With this instrument, when you have to extirpate a nodule, you have only to introduce it till it engages the nodule, and then by a simple movement you will very easily remove any projecting surface; and I suggest to Dr. Heryng the next time he goes to Paris to get one of my instruments to assist him in his operations, for I am sure it will be of great benefit to him. I would also ask Dr. Heryng whether he has tried the effect of phenol sulphuricinate proposed by Ruault, which he has found very efficacious during last year. I employed it in the case of a young lady who had infiltration of the larynx, and I had the pleasure of dismissing her after three months' treatment. I have used Ruault's method on a large number of cases in my clinic, and I generally get relief, and in some cases a cicatrization of the ulcerations. It is very difficult to compare one remedy with another, but I would recommend my colleagues to try both, and I should not be surprised if they ended like myself in giving the preference to Ruault's remedy.

Dr. LAW: I should like to make a few remarks in reference to the subject before us, which, I think, may be of particular interest to those members who have to treat patients under bad climatic surroundings. I quite agree with the observations of Dr. John Noland Mackenzie in reference to the difficulty sometimes experienced in finding a suitable resort in which a patient may obtain the proper special treatment. In 1891 I was consulted by a lady, aged thirty-two, who complained of difficulty in swallowing and most troublesome cough at night. I examined the throat, and found a swelling of the posterior wall of the larynx and ulceration of the posterior surface of the epiglottis. I prescribed simple sedative remedies, as she was unable to remain in London. A few weeks afterwards her husband wrote to me and asked if his wife could not use the laryngeal insufflations herself. I thought it possible, as she was a most intelligent woman, and I wrote, suggesting she should come to town in order that I might explain to her how to use the insufflation, and also, if desirable, paint the ulcer with a solution of cocaine. She was soon able to put the powder into her larynx by means of an insufflator and an auto-laryngoscope better than I could. I prescribed painting the larynx with menthol in olive oil insufflations, etc., and sent her into the country. For three weeks the reports were favourable. In September she came back with a most irritable cough. I showed her to my friends Dr. Jewell, Mr. Wilkin and Dr. Lauder Brunton, and I suggested curetting the ulcerated surface of larynx. I curetted the posterior surface of the epiglottis, and requested Dr. Jewell to remain in the country with the patient three or four days in order to guide her whilst applying lactic acid to the curetted surface of the larynx. It was in October, and the weather most unfavourable, and my patient was undoubtedly at the end of a week or ten days losing ground. I thought the best thing I could possibly do was to send her away to the Riviera, with instructions to continue auto-laryngeal treatment. Whilst there she applied strong lactic acid to her larynx for several weeks (at Mentone), but I heard, after a fortnight, that there was little or no improvement. At the end of three weeks the ulcer was much smaller, and at the end of eight was perfectly healed. A little while afterwards she wrote and asked me if it were possible that the scar was getting whiter. She had another attack of hæmoptysis, and I saw her again in June of 1893. Drs. Lauder Brunton, Whistler, and Mr. Wilkin examined her larynx, and were exceedingly pleased with the result. I saw her again the next year, and the condition was the same, *i.e.*, a cicatrix. I mention this case to show that even sometimes, if you cannot get skilled treatment, it is worth while to trust our patients a little more than we do. I believe that the patient's life was saved by auto-laryngeal treatment under favourable climatic conditions after successful curettement.

Dr. DELAVAN: The most interesting clinic that I have ever attended was that of my distinguished friend Prof. Krause. I came to Berlin very sceptical with regard to the value of the surgical treatment of laryngeal tuberculosis, understanding how it was possible that these operations could be successfully performed on the one hand, and on the other how the healing of the laryngeal wounds could be completed afterwards. I believe that if all could see Prof. Krause himself operate we might, perhaps,

gain a very different idea of the value of this procedure. Among my colleagues at home, with the exception of Dr. Gleitsmann, there are very few who would even undertake to try the method, because, in the first place, they do not fully understand its technique, and, in the second place, they have not seen the really marvellous results of the method in Prof. Krause's hands. There are, without question, some objections to it, and those objections I beg leave to state with some frankness. I have found in my own efforts in employing the measure that a great deal depends upon the temperament of the patient. Our patients will not submit to treatment as easily as patients in some other countries will. It is a striking fact that one of the most successful operators in the United States, Dr. Morris Murray, of Washington, has gained nearly all his successes in negroes. The negro is less nervous, and at the same time he is much more manageable. I may say that the best cases that I have seen in my own practice have been those in whom the temperament of the patient and the controllability of his will and mind were such as to make the application of the method possible. That it is a valuable measure I am certain, and would emphasize the fact that to be successful it should be thoroughly understood that the technique should be carried out with refined skill, and with a high degree of precision, accuracy and care.

Dr. SAJOURS : I would like to ask Dr. Heryng if he has ever encountered œdema, for this is an element that we are apt to fear in this class of laryngeal operations.

Dr. HERYNG : The question asked by Dr. Sajous, as to the frequency of œdema after curettement of the larynx, is a very important one. It brings to mind those cases of tuberculous infiltration of the larynx occurring in people who are so sensitive to any laryngeal interference that even painting with menthol or with a weak ten per cent. solution of lactic acid very quickly produces œdema of the infiltrated parts, such, for instance, as the arytenoid cartilages. But these are exceptions. As a rule, the wounds made by the curette close soon enough when sharp instruments have been employed—that is to say, when the borders of the wound are not lacerated. Wounds with smooth edges hardly ever give rise to acute inflammation of the surrounding parts ; on the contrary, after the operation the œdema already present disappears very rapidly, because tension is relieved and morbid products and small centres of suppuration find free exit. To avoid infection of the wounds, the best plan is to paint them as soon as the bleeding has ceased with a one to two per cent. solution of pyoktanin (Pyoktanineum cœruleum—Merki).

The solution should be freshly prepared, and the wound should be completely covered over with a dark-blue colouration. For some patients even a two per cent. solution is too strong, and the day after the application the wound is seen to be coated with a greyish film, arising from a necrosis of the superficial layers of the epithelium. This condition is usually accompanied by a redness and tumefaction of the mucous membrane, and sometimes also by an inflammatory irritation, which is set up directly after the application has been made. This is a sign that the pyoktanin solution has been too strong. Generally speaking, solutions

of one per cent. are well borne and do not give rise to the greyish false membrane alluded to ; on the contrary, the surface of the wound is cleaned, the œdema already present is diminished, and the pain and dysphagia are relieved. Sometimes a three per cent. solution is tolerated, but ordinarily a two per cent. is quite sufficient to prevent a recurrence of purulent infection of the wound after curettement and hasten cicatrization. During the first three days after the operation the larynx should be painted with the pyoktanin twice a day. During the three following days one application is sufficient. The prejudice of many of our *confrères* against pyoktanin is quite without foundation. It is easy to prevent the drug from touching either the patient's mouth or the surgeon's fingers. To remove stains caused by it, alcohol, lactic acid (twenty per cent.), or tartaric acid, are useful. The tartaric acid sticks which remove ink stains are equally serviceable to take out those of pyoktanin.

I consider this drug in two to four per cent. solutions one of the most effectual remedies in inflammatory or suppurative wounds of the pharyngeal, laryngeal and nasal mucous membranes. I have employed it in such a number of cases (including all applications of the galvanocautery) that I am in a position to recommend it confidently to my colleagues, and I am sure they will not be disappointed with their results.

Dr. MACKENZIE (Baltimore) : I have listened with a great deal of interest to the excellent papers on this subject, and have been particularly impressed with the exceedingly valuable and lucid narrative of Prof. Krause. No two men in the whole international world of laryngology are better qualified to speak on this subject than Prof. Krause and Dr. Heryng. It is, therefore, with considerable diffidence that I rise to speak upon the matter. I think the labours of these two gentlemen have placed the fact of artificial cure of tuberculosis of the larynx far beyond the reach of reasonable controversy. It is an established fact that laryngeal tuberculosis, even in the presence of extensive tuberculosis elsewhere, can be radically and permanently cured by intra-laryngeal surgical procedure, or, for the matter of that, without surgical procedure, if we eliminate from that category curetting and treatment with lactic acid. Taking this as a fact, I am prepared for myself, and have actually done so, to follow the lead of these gentlemen in the surgical treatment of this affection. I agree with Dr. Delavan as to the disadvantage we labour under in America with regard to the kind of patients we get, as compared with those our Continental friends are accustomed to. But there are cases in which we are allowed to operate, and I think we do an injustice to our patients if we let the opportunity go by, especially in the presence of intense dysphagia or of intense dyspnœa. I am not yet prepared to advise operations in cases of very diffuse infiltration. In this class of case I operate with some little trepidation, but my experience is not so large as that of my distinguished friend, Dr. Heryng. As to climate, I should, in sending the patient to a health resort, choose a less favoured one, provided there be a competent person at such locality who thoroughly understands intra-laryngeal work. Unfortunately laryngeal tuberculosis kills in any climate and under any circumstance ; it is one of the most dreadful forms of tuberculosis with which we have to deal. In regard to

Prof. Krause's first proposition, that in *all* cases in which tubercular ulceration is complicated with infiltration surgical treatment is necessary, I am not prepared to accept that in its entirety. I do not believe that in all cases we are justified in operating.

We have to select our cases. The brilliant results obtained by these gentlemen certainly prompt us to imitate their example. As for the operation proposed by Dr. Schmidt, of deep incision of the parts with forceps and other instruments devised by him, I never expect to have any experience with that method. In the treatment of tumours of the larynx, I think that the indication is very definite—viz., that they should be removed as thoroughly as possible. Formerly I used to counsel against the removal of granulation tissue. I looked upon it as a conservative process on the part of nature and an attempt at repair, but, in consideration of the fact that in the struggle between bacillus and phagocyte we have a very unequal battle, I think it the part of safety and prudence to remove, as far as possible, all granulation tissue. In regard to external operations, it cannot be said, in the light of our present experiences, that we have done much to mitigate the sufferings of our patients by recourse to them. They have only brought additional discomfort to the patient's existence, which they have not prolonged, whilst—in some of the cases, at least—they have undoubtedly hastened the fatal termination. At all events and under all circumstances, it seems to me that such operations are not justifiable until after intra-laryngeal methods by an expert have failed to remove the offending tissues through the natural passages; nor are we justified in those cases of tuberculosis of the larynx in which that organ has been converted from its normal structure into a hopeless ruin in the presence of extensive pulmonary disease, or in the presence of very extensive tubercular disease elsewhere, except to remove dysphagia or extreme dyspnoea, in resorting to radical surgical measures. Such patients die—they are past all surgery; and the patient should not be made to bear the cross in order that the surgeon may wear the crown.

Prof. KRAUSE: Gentlemen,—I was prepared to hear a great deal said about my going too far in recommending this operation in rather difficult cases. I think our situation is a somewhat difficult one—I mean our personal situation. I have sent to me a great number of patients in very advanced periods of their suffering; and especially when a case like the one I have mentioned—the wife of a physician—comes to me, brought by the physician himself, and the patient asks me in the most urgent manner to operate upon her, then we are forced to make attempts to help those miserable patients. I have particularly stated in my paper that I do not claim to cure these cases, but to relieve them. To relieve our patients is, according to my mind, one of the greatest works of our art. I do not recommend the treatment for general use, but we must do our duty in relieving the patients, and if we can master a method, then we shall be able to limit the extent of our operations. If you have, for instance, a patient—and I think it is a matter which touches our feelings—who is young and almost dying of starvation, and you see it is only the impairment of the swollen ary-epiglottic folds, we must do our best to

relieve him, or to make him hope that he can be relieved. It is a source of great satisfaction to us to have your promise to again take up this method of operation. and if we take nothing more back with us to our homes, we take this valuable promise, and I thank you all very much for this acknowledgment of our work.

CASES EXHIBITED.

A Case of Successful Excision of Half of the Larynx for Cancer.

Mr. ROBERT H. WOODS (Dublin) exhibited a man, aged thirty-two, from whom he excised the right half of the larynx from the great cornu hyoid bone to the arytenoid cartilage inclusive, for cancer. The operation was performed on April 1st. and the patient made an uninterrupted recovery. The glands covering the internal jugular vein and those lying under the angle of the jaw were secondarily involved and removed. The patient, on the twenty-eighth day after the operation, was able to swallow milk : he is quite comfortable, has a fair voice, and there is no appearance of recurrence. The tumour on section was found to be a squamous epithelioma and apparently sprung from the right ary-epiglottic fold. About three-fourths of the lumen of the larynx was taken away and the cicatrix resulting is being treated by dilation with Schroetter's tubes.

A Case of Successful Extirpation of the Whole of the Larynx for Cancer—Preservation of Speaking Voice.

Dr. DELAVAN showed a patient operated on three and a half years ago by Dr. J. Solis-Cohen, of Philadelphia, for adeno-carcinoma of the larynx. Total extirpation of the larynx was performed, including the first ring of the trachea, and the far end of the trachea was attached to the wound in the neck, thus cutting off absolutely the pharynx from all communication with the lung. There are several particulars with regard to the operation with which I will not detain you. I simply wish to say the patient recovered brilliantly and that he is now well. That this operation is distinctly an improvement upon the older methods is evidenced in this case. Among other things, the man can speak and swallow without artificial aid of any kind. [The man then spoke from the end of the room, explaining how he came to England and then repeated the numerals from one to ten, all of which were perfectly audible.]

A demonstration was made of—

1. *Coloured Plastic Models of interesting Diseases of the Larynx* (from the Pathologico-Anatomical Institute of the Königl. Charité zu Berlin ; Director : Prof. RUDOLF VIRCHOW), prepared by Dr. PAUL BERLINER (Berlin).

2. *A Phantom of Diseases of the Larynx for diagnostic use, and the teaching of operative technique.* By Dr. PAUL BERLINER (Berlin).

These were exhibited by Dr. THEODOR HERYNG for Dr. BERLINER. The plastic models were of exceptional beauty. They received the Gold Medal at Chicago in 1893, and a Silver Medal at the International Medical Congress in Rome, 1894.

• GENERAL BUSINESS.

Two motions were brought forward—

1. That of Dr. MACINTYRE: That an additional Secretary be appointed.
2. That of the PRESIDENT: That a Treasurer be appointed.

Dr. MACINTYRE said he was sorry that owing to a number of causes he had not been able to bring his motion before an earlier meeting of the Association, as he had intended to have done. He had had considerable experience with the management of an association, and a good deal to do with the reporting work. From his experience of secretarial work he thought it would be a very wise arrangement to have two Secretaries, one to look after the general business of the Association, and the other the reporting.

Mr. LENNOX BROWNE seconded, and suggested that the difficulty in the way of definite election at this meeting might be got over by appointing a Secretary *pro tem.*, and leaving it to the Council to confirm or to bring forward another name for election at the next meeting. He would propose that Mr. Lake be appointed *pro tem.*

Dr. LAW said he had much pleasure in agreeing with Mr. Browne's proposal, and seconding the temporary nomination of Mr. Lake.

Carried unanimously.

The PRESIDENT suggested that the previous motion did not imply that the Secretary should be also a financial Secretary, and he therefore thought that the office of Treasurer should be instituted.

Mr. LENNOX BROWNE thought this would have to be left for another year, as the Secretary's work would be lightened by having another Secretary. He thought that the question of appointing a Treasurer should be discussed at a Council Meeting, and wait for ballot till next year.

Dr. LAW thought it might be decided that the Association should have a Treasurer, though perhaps election might be postponed.

Dr. STOKER thought that as notice had been given of this motion, it would be quite in order to alter the laws, thus authorizing the Council to nominate someone who would be balloted for at the next General Meeting.

The PRESIDENT said his feeling, after much experience in secretarial work, was that the financial part of the work should be undertaken by a specially appointed Treasurer.

Mr. LENNOX BROWNE agreed, but suggested that the name be submitted for ballot at the next meeting.

Dr. STOKER said he would have much pleasure in nominating Dr. Wolfenden.

Dr. MATHESON thought it would be better to leave the nomination to Council.

Mr. LENNOX BROWNE reminded the President that officers had always been nominated by Council.

The PRESIDENT said he was quite willing that the rule should be followed.

It was finally agreed to leave the election of Treasurer till the next General Meeting.

BRITISH MEDICAL ASSOCIATION.

Annual Meeting, London, August, 1895.

SECTION OF OTOTOLOGY.

THE presidential address was delivered by Sir WILLIAM DALBY. In the course of his remarks he referred to the progress made in otology since the last meeting, and to the great importance of the discussion before them on the proper treatment of nerve deafness.

He showed a very interesting case of *Objective Tinnitus in a Young Lady*, where a distinct harsh sound, synchronous with the pulse, was easily heard on auscultation, not altered by pressure or movement of the head, but losing a beat once in ten.

Dr. DUNDAS GRANT then opened the discussion on the *Treatment of the Various Forms of Nerve Deafness*. He first insisted on the necessity of a proper differentiation, and showed some tables tabulating the forms of this disease under the various heads, namely, diseases of the labyrinth, diseases of the auditory nerve, and disease of the auditory centre. He referred to the various forms of treatment at our disposal, and stated that in certain cases pilocarpin had been used with good effect, especially in recent exudations. Galvanism had been found of great service in functional deafness, and some improvement had followed its use in deafness due to noises, as boiler-maker's deafness, etc. He considered that pilocarpin might be used with advantage in labyrinthine congestion, or in early cases of acquired syphilis. It was contra-indicated in anæmia and advanced tertiary disease. He has used it or jaborandi, with satisfactory results, in deafness accompanying mumps. In conclusion he drew attention to the following points:—

- 1st. The necessity of careful diagnosis in cases of nerve deafness.
- 2nd. The value of the pilocarpin treatment in fresh exudation into the labyrinth.
- 3rd. The frequency of middle-ear disease giving rise to Ménière's symptoms; and, lastly, the importance of recognizing the frequency of functional changes in the auditory faculty.

Dr. LEWIS JONES stated that he had certainly seen some improvement in cases of deafness and tinnitus follow treatment by the battery. He thought that we should soon be able to decide what cases were suitable for this form of treatment.

Dr. MACNAUGHTON JONES, in a paper on *Some Etiological Considerations in the Treatment of Nerve Deafness*, referred to the fact that a long residence in India will sometimes cause nerve deafness. He had tried pilocarpin; in his hands it had utterly failed, and he had not found galvanism of any good.

Dr. BARR spoke on the importance of recognizing the *Frequency of Middle-Ear Disease accompanying Nerve Deafness*. He had not found

pilocarpin of any use ; in some cases he had found temporary improvement in the tinnitus, when present, follow the use of tones removed as far as possible in pitch from the sound in the ear.

Mr. G. W. FIELD stated that he certainly had had some good results from pilocarpin, and believed that, if the cases were properly chosen, treatment would prove satisfactory.

Sir WILLIAM DALBY referred to the necessity of caution in the administration of quinine where there was any tendency to deafness.

Drs. E. LAW, MILLIGAN, WARDEN and Mr. E. H. BENNETT also spoke on the subject.

Dr. W. MILLIGAN (Manchester) read a paper on *Tuberculous Disease of the Middle Ear*. The object of the paper was to point out that primary tuberculosis of the tympanic mucous membrane was a far more common affection than was usually supposed. In some inoculation experiments he had made on guinea-pigs with pus from a series of mastoid operations eighty per cent. had proved tuberculous. The paper was illustrated by drawings, dissections and microscopical specimens. He pointed out the importance of the early recognition of the tubercle in these cases, as regards operative interference, and the necessity of clearing out all the diseased tissue.

Sir WILLIAM DALBY referred to the extreme value of this paper, and mentioned how often one finds in cases of advanced phthisis pale, painless ulceration of the membrana tympani.

Dr. T. BARR read a paper on *The Treatment of Intractable Middle-Ear Suppuration by Operation through the Mastoid*. In his hands the globular dental burr had proved a far more serviceable instrument than the chisel and gouge, the clean surface left by the burr enabling the operator to estimate the direction and depth.

Dr. BRONNER (Bradford), in some notes on *Five Cases of Attic Disease treated by modified Stacke's Operation*, insisted on the importance of thoroughly exploring the attic and mastoid cells.

On the second day of the meeting—

Prof. MACEWEN (Glasgow) opened a discussion on *Cerebral Complications in relation to Middle-Ear Disease*. He drew the attention of the meeting to three points. Firstly, as to some fallacies in localization ; secondly, the necessity of early recognition of tuberculous disease of the middle ear ; and, thirdly, the importance of bacteriology in aural surgery. It was impossible to depend on the presence or absence of bone conduction in differentiating between cerebral and cerebellar abscess. The great point was to thoroughly remove all foci of pyogenic infection. He reminded the meeting that tubercular disease of the middle ear might reach an advanced stage without any perforation of the membrana tympani. He drew attention to the vast importance of careful antisepsis in aural operations. In conclusion he brought forward the following propositions :—(1) That the extension of infective disease from the middle ear to the brain and its membranes was preventible ; (2) that when disease was established in the middle ear it should be thoroughly eradicated ;

(3) that when brain trouble had been set up it was necessary to remove not alone the infected part, but also the path by which infection had travelled.

Dr. LUC (Paris) read the notes of a case of cerebellar abscess with destruction of the petrous portion of the temporal bone and large cholesteatoma in the antrum.

In the discussion on the paper—

Mr. MARMADUKE SHEILD pointed out how necessary it was to remove all foci of disease, and the importance of using antiseptic precautions in dealing with granulations.

Drs. T. BARR, DUNDAS GRANT, MCBRIDE, and PRITCHARD also spoke as to the importance of early treatment of middle-ear tuberculosis.

Prof. MACEWEN, in reply, stated that, even in advanced cases of cerebral disease, it was the duty of the surgeon to give the patient the chance by operation. It was important to keep up thorough drainage, and he had found the dry dressing more satisfactory than syringing out with antiseptics.

On the third day of the meeting—

Mr. CARMALT JONES opened a discussion on *Turbinotomy in connection with Tinnitus Aurium*. He had found good results in some cases as regards the tinnitus, where he had removed the hypertrophied inferior turbinate. He considered it acted as a foreign body, keeping up Eustachian catarrh.

Drs. MACNAUGHTON JONES, BRONNER, WARDEN, and URBAN PRITCHARD believed that the galvano-cautery and other forms of simple local treatment would prove quite as effectual in relieving the tinnitus as turbinotomy, without the risk of hæmorrhage, which there undoubtedly was after that operation.

Dr. HEMINGTON PEGLER showed a number of microscopical sections of various degrees of turbinal hypertrophy.

Prof. GUYE (Amsterdam) gave an account of *A not yet described form of Rotatory Sensation in Labyrinthine Disease*, the objects appearing to turn from right to left, as the hands of a clock, or as a wheel turning. When the rotating sensation was slight there was an involuntary movement in the same direction; when severe, in the opposite direction.

Dr. BRONNER said that he believed the vertigo was of vascular origin, and agreed with the French authorities that it was more cerebellar than aural.

Drs. URBAN PRITCHARD and T. BARR referred to the functions of the semicircular canals in rotatory sensations.

Dr. MACNAUGHTON JONES read a paper on *Some Forms of Ménière's Disease*, with the treatment, and mentioned a case of typical Ménière's disease, and one of marked hyperæsthesia acustica.

Mr. CRESSWELL showed a *Dummy for illustrating and teaching Diseases of the Naso-Pharynx*, and demonstrated a *Case of Objective Pulsating Tinnitus audible on auscultation*.

Mr. LAKE, F.R.C.S., read a paper on the *Anatomical Relations of the Membrana Tympani, and their Pathological Importance*. He showed a large number of specimens, proving the connection of the membrana propria with the surrounding fibrous structures and the periosteum.

Dr. WARD COUSINS showed some *Improvement in Artificial Drums*. The cases suitable for these drums and the condition of the middle ear, where the hearing was improved, were discussed by Drs. EDWARD LAW, MACNAUGHTON JONES, Mr. CRESSWELL BABER and Mr. ST. GEORGE REID. In the opinion of the section the cotton-wool drums were more satisfactory in treatment than those of Dr. Ward Cousins.

Prof. GUYE mentioned a *Case of well-marked Deafness*, where, after trying many different forms of artificial drums, the patient, after a little instruction, was able to arrange a cotton-wool drum for himself, enabling him to appreciate ordinary conversation.

Sir WILLIAM DALBY mentioned the fact that in some cases the membrane was reproduced, and one case where it was reproduced three times.

A hearty vote of thanks to the President (Sir William Dalby) and the honorary secretary closed the section.

FRENCH SOCIETY OF OTOTOLOGY, RHINOLOGY, AND LARYNGOLOGY.

Meeting, May 1st, 1895.

On Acute Ulcerative Lacunar Tonsillitis. By Dr. E. J. MOURE, Lecturer in the Faculty of Bordeaux. (Continued from p. 620.)

III. *Etiology and Pathogenesis.*—The affection which we are now studying appears to have been more frequent in spring and autumn, and, if we may depend on our own observations, it is observed particularly in young people between twenty and thirty years of age. I have never met with it in children, although there is no reason that they should be exempt, nor have I seen it in adults over forty years of age. The comparative rarity after this age may be explained naturally by the fibrous transformation that the tissue of the tonsils undergoes at this period, which renders them less liable to acute inflammation. It will be observed later on that several of my cases occurred in students of medicine in their second or third year. This is certainly a pure coincidence unless we admit that their sojourn in the hospital or in the midst of more or less infectious agencies may become the source of this local process, which is evidently, by preference, found in subjects who are somewhat debilitated or fatigued after the slightest exposure to cold. Thus it happens that occasionally we have found it accompanying the eruption of a wisdom tooth when that process was accomplished with difficulty. In other cases it is after excessive

fatigue or an attack of influenza. It is somewhat extraordinary—at least, apparently so—that none of our patients have had a second attack of this localized ulcerative tonsillitis. Some of our patients, but not all, presented the type of tonsils described under the name of lacunar. Frequently the lacunæ were numerous and deep upon the opposite tonsil. Often also the glands were developed to such an extent as to deserve the qualification of hypertrophy. At all events, we have met with the lesion in tonsils of comparatively small size which scarcely projected beyond the anterior pillars.

It is certainly quite beyond doubt that the ulcerative process to which we allude is of microbic origin, and yet in numerous sections, stained according to Gramm's and Weigert's method, it has not been possible at the Laboratory of Pathological Anatomy at Bordeaux to reveal the existence of any micro-organisms.

We repeat in fact with MM. Legendre and A. P. Claisse,¹ "tonsillitides, always diseases of an infectious character, may depend upon the presence of the most various microbes, and the objective aspect scarcely permits us, unless indeed in diphtheria, to presume in each case what may be the pathogenic agent (streptococcus, staphylococcus, pneumococcus)." We know, further, how difficult it is sometimes to isolate in the mouth the pathogenic organisms which are found there under normal circumstances, and which do not seem to occasion any trouble or to develop unless some special cause is provided, whether it be a loss of resistance on the part of the subject, or a local irritation of some kind or other. While admitting, then, the microbic nature of the tonsillar ulceration, we think that it is necessary to look for the cause of the acute inflammation of the crypts themselves in the too rapid exudation of the desquamative products, which cannot be sufficiently quickly eliminated. There results so far dilatation of one or more lacunæ, whose walls thus come to give way so as to run one into the other to form a single anfractuous cavity filled with epidermitic detritus, and disfigured follicles, which in their turn break up somewhat rapidly the layer of healthy tissue which separates them from the exterior just as an abscess would do. When once this membrane has given way the ulcer is constituted with its crater-like opening and its irregular margins, without any trace of very diffuse inflammation, and without any marked symptomatic disturbance.

This is, on the whole, an exaggeration of what MM. Sokolowski and Dmochowski (Warsaw) described ("Arch. de Laryng.," &c., of Ruault and Luc, No. 6, 1891, and Nos. 1 and 2, 1892) in Vol. V., p. 17, 1892, of their work on the inflammatory processes in the tonsils under the name of "tonsillitis lacunaris chronica desquamativa exacerbata." These authors, describing chronic lacunar tonsillitis and the caseous matters which form in these cases, recall, in fact, the existence of these little submucous accumulations having the appearance of encysted abscesses, which are nothing else than epithelial *debris*² without any globules of pus. These authors speak also of ulceration, but this refers to the simple loss of

¹ Soc. Méd. des Hôp. de Paris, January 8th, 1892, and "Bull. Méd.," 1892, p. 26.

² See a communication by M. Brindel to the Society of Anatomy, Bordeaux, 14th April, 1895.

substance situated at the mouth of the crypt thus open, and not of the large ulcers with sanious floor, resembling at the first view genuine ulcerated gummata.

It is easy to see we are not here concerned with the lacunar angina cited by B. Fraenkel ("Berliner Klin. Woch.," 1886), and some months later by Seifert ("Wiener Med. Woch.," 1886, p. 1133); for the form of inflammation which these authors described approaches more nearly that of diphtheria, from which they sought to diagnose it, than to the tonsillar ulceration which we call lacunar, in order to establish its nature, its origin, and its clinical relationships.

IV. *Pathological Anatomy.*—We shall conclude this description with the result of the histological examination carried out in the Laboratory of Pathological Anatomy attached to the Faculty of Medicine at Bordeaux. The ulcerated portion of the tonsil was removed by means of a punch, and was at once fixed by means of sublimated alcohol, then stained in picro-carmin in a mass, and imbedded in paraffin. Sections made horizontally extended at the same time into what we shall call the pedicle—that is to say, into the neighbouring epithelium and into the ulcerated portion itself. The periphery can then be divided into four segments; one of them we have nothing to do with—that is to say, the line of section; of the three others two present a covering of epithelium; the third, comprised between the two and diametrically opposite to the first, is simply the ulcer itself, from which the epithelium has disappeared. The covering of epithelium upon the two segments which bear it is manifestly in course of proliferation. It is thickened to the extent of five or six times, but it does not present an identical structure in all parts. On one side it penetrates to a very great depth by means of conical prolongations, with a summit directed towards the surface, their base being rounded and buried in the middle of the submucous tissue. We then find a very well-marked papillary appearance, produced at the expense of the deep parts of the epithelial layer. The papillæ do not raise up the superficial layers, which are formed of pavement epithelial cells to the number of from eight to ten, disposed in stratified layers. These cells have preserved their nucleus. The epithelial interior papillary prolongations, formed at first of more or less cubical and polyhedric cells, soon take on a more and more elongated form, and are arranged in a fan-shape coming to form in their deepest layer a range of cylindrical cells, compressed against each other and of much greater volume than in the normal state. This layer limits the epithelium completely in its whole extent. On the opposite side this papillary aspect is not found. The epithelial layer cannot be delimited precisely, and the deep layer of normal cylindrical cells no longer exists. The cells are arranged in series parallel to the surface. They are less stained than the rest of the section—at least, in the external two-thirds of the thickness of the epithelial covering—but they have preserved their nucleus. They form a sort of epidermic stratum, whose staining becomes, little by little, more accentuated as we get further from the surface, and which is continued, almost insensibly, into the subjacent tonsillar tissue. It is possible in any case to suspect the position of the limit, which is somewhat undulated,

by means of the slight difference of colour in staining, and, under a high power, by the progressive disappearance of stratification.

In the pedicle this epithelial layer terminates along a line which contains the line of section of the tonsillar tissue, and of the epithelial covering opposite it. On the side of the ulceration the superficial half of the epithelium disappears suddenly, the other half rapidly becomes thinner, and soon disappears altogether. Between the two segments covered with epithelium we perceive a deep hollow of an irregular shape, bordered here and there with patches of very badly stained tissue, in which, even with a high power, one can hardly recognize any cellular form. This substance appears to be composed of an infinite number of small granulations taking on a very weak pink stain, and in the middle of these granular masses there can be seen, here and there, a large rounded nucleus of a deep red stain belonging to a cell whose protoplasm surrounds the nucleus, but very feebly developed.

The granular patches are chiefly arranged round the periphery. Here and there they present prolongations into the depth in the middle of the subjacent tonsillar tissue. This tissue at first appears to possess the characters of the normal tonsil. It differs, however, in three principal particulars: *the cells which constitute it are compressed the one against the other* much more than in the deeper parts; the closed follicles are not to be found in it; it consists of a uniform tissue infiltrated with rounded nuclei and very highly stained; lastly, the vessels which in the healthy tonsil are few in number, and scarcely visible beyond the fibrous trabeculæ which occupy the furrows in the tonsil when it is hypertrophied, the *vessels* we say are here *very numerous and much dilated* in the very middle of the tonsillar tissue properly so called. In any case they are most numerous and of greatest size immediately under the papillary epithelium, in the derma of the mucous membrane to such an extent that in some places the section presents the appearance of an angioma. Among the largest, certain ones have a small boundary wall formed of a simple garland of connective tissue infiltrated with round cells; the others, large and small, have no wall whatever.

Lastly, in the deeper parts as we approach the pedicle at about a quarter of a millimetre from the surface the tonsillar tissue recovers its normal characters, the closed follicles reopen, they are easily recognizable and of fair size; the vessels diminish in number and in size, showing thus that all trace of inflammation has ceased at this level. The preceding description confirms in every way the clinical development which we enunciated above. Pathological anatomy explains to us equally how the repair of the necrosed tissue takes place, as well as the apparent cicatrization which we have met with in all cases.

V. We shall be short as regards the treatment, which it appears to us should above all be antiseptic, and we therefore give preference to a proceeding which consists in the first place in a thorough cleansing of the surface and of the ulcerative cavity from all the necrosed products which are there contained. For this purpose a brushing, or, rather, a thorough scrubbing, should be carried out by means of the wool holder, with a solution of chloride of zinc of one in twenty or one in thirty, which

appears to me to be the best topical application. The following formula might be employed :—

Hydrochlorate of cocaine.....	30 to 50 centigrammes.
Chloride of zinc	1 gramme.
Hydrochloric acid	$\frac{1}{2}$ a drop.
Pure glycerine	10 grammes.
Distilled water	15 to 20 grammes.

This being done, the patient should gargle several times a day with a spirituous solution (a gargle of boric acid and bromide sweetened with neutralized glycerine).

Next day the throat should be brushed with chloride of zinc, or with the ordinary solution of iodide and iodine and carbolic acid. Simple carbolized glycerine of the strength of one in ten or one in fifteen is also an excellent local measure.

Next, in proportion as the ulcer becomes clean and the wound cicatrizes, we give up the brushing, and confine ourselves to prescribing the alcoholic gargle. Scraping or abrasion of the ulcer by means of the cutting forceps at the commencement have also given very good results in my hands.

The chief point is, on the whole, to carry out the hygiene of the mouth and the local hygiene in order to prevent the contamination of the neighbouring parts, such as appears to have taken place in one of my cases. We must not forget that in these cases a cure within a few days is the rule.

It is unnecessary to add that if the patient is a smoker he will do well to abstain from tobacco until his recovery is complete.

Case 5. *Acute ulcerative tonsillitis of the left side.* (Reported by the patient.)—M.C., aged twenty-one, medical student, has given us the description of his own case. “I have,” he says, “always suffered from my throat, especially during winter. I have had several attacks of tonsillitis, and last winter a naso-pharyngeal catarrh. In 1894, I had the right tonsil destroyed by means of a succession of galvanic cauterizations. From this time I have no recollection of having suffered with the throat until three weeks ago, towards the end of the month of October, when I felt a slight discomfort in swallowing. I thought at once of a recurrence of tonsillitis, and I did not worry myself about it. I continued to eat, drink, and smoke in the ordinary way, perhaps even more because I had holidays at the time. Next day I awoke with the throat dry and the pain in swallowing considerably increased, and I then inspected my left tonsil. I was much astonished to see on the antero-external portion of it an oval ulcer whose long diameter was at least two centimètres, forming an excavation with sharply cut edges, and covered with a complete layer of white material. In order to find out how adherent it was I gargled my throat two or three times, but the substance remained fast. Without knowing the nature of the affection I did not think of syphilis, as, in point of fact, I had never had either primary or secondary manifestations, and this ulcer, if syphilitic, could only have been tertiary. Further, I had not the slightest reason to think of any hereditary taint. (*Vide Fig. 1.*)

“I remained five days without showing the ulcer to anybody and continued during this time my ordinary holiday life, feeling only a slight discomfort in swallowing, but no real pain. This discomfort only lasted for three days, and



FIG. 1.—CASE 5.



FIG. 2. CASE 7.

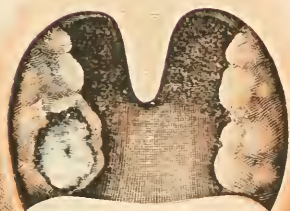


FIG. 3.—CASE 8.



FIG. 4.—CASE 9.

ILLUSTRATIONS TO DR. MOURE'S PAPER.

during the course of this time I observed that the ulcer underwent no change in appearance, but the inflammation became less severe.

"In passing I ought to say that I had no swelling of the glands in any region whatever.

"Getting anxious about this obstinacy I consulted a physician, but I got very little comfort when I found him hesitating long as to whether it was a syphilitic or an acute catarrhal affection. Without giving a decided opinion, he advised me to gargle with antiseptic fluids, and to let him see me two days later on. I did this, and found that little by little the margins of the ulcerations became less prominent, and that the white substance began to be thrown off. On the day proposed I went to the physician who had seen me before, but in his absence I got Dr. Moure to examine. The diagnosis was made at once with a degree of confidence which was most gratifying, as it removed a state of doubt which was highly disagreeable. The idea of a syphilitic affection was at once set aside. My tonsil was painted with tincture of iodine, and, on the advice of Dr. Moure, I practised antiseptic gargling for three or four days afterwards. Little by little the white matter cleared off, the margins of the ulcerations became softer, the inflammation disappeared completely, and recovery took place at the end of a week.

"Meanwhile the ulceration left its mark and there remains on the tonsil a funnel-shaped cavity differing in no way from the appearance of the neighbouring tonsillar tissue."

Case 6. *Ulcers of both tonsils.*—Monsieur X., aged twenty-two, medical student, says that for a fortnight he observed that without any reason his gums bled very easily and rather freely when he cleaned his teeth. The dentist advised him to use a hard tooth brush, and to suck chlorate of potash lozenges. A few days after his visit to the dentist he felt behind the molar teeth, but especially on the right side and below, severe pains which lasted for several days, and led him to consult me. Dr. Brindel examined him, and found nothing abnormal, the pains apparently being due to the eruption of the wisdom teeth.

However, as the patient had a cold for several days, and he feared that there was something the matter with his throat, he examined these parts every day. Two months ago, that is to say, on the 1st of March, the patient perceived on the tonsils, especially on the right one, a white pellicle, which he removed so as to expose a small ulcer, and this decided him to come again for consultation. In this way these ulcers could only have existed for two or three days, when we removed them along with the portion of the tonsils on which they were situated. The patient insisted that he never had any venereal disorder, but he was afraid lest he might have accidentally become inoculated with syphilitic virus.

He had never been delicate about the throat, and only remembered having suffered with it once since he was five years of age, namely two years previously, when there was a fear that he had contracted diphtheria, and numerous cauterizations were required. The sore throat of two years before was a simple one and rapidly got well under the use of gargles of boracic solution. He was subject to articular rheumatism from the age of twelve, and he had had it at the same time as his sore throat, two years before. On examining the back of the throat I observed on the right tonsil, and in the middle of the glandular tissue, near the upper third, a crateriform ulceration of the size of a piece of twenty centimes. The borders were red, slightly irregular, and the floor was greyish and pulpy. When it was cleaned by means of an armed wool-holder, impregnated with a weak iodo-iodide solution, the floor appeared reddish and rough. The rest of the tonsil was healthy, and scarcely even inflamed.

On the left side, about the same level, there was an analogous ulcer, although

possibly somewhat less in extent and nearer the anterior pillar, which covered in part the loss of substance without presenting any apparent tumefaction. The tonsil was very slightly enlarged, and in order to see the base of the ulcer it was necessary to depress the tongue forcibly, and to make the tonsil rotate on itself, which was easily effected by carrying the tongue-depressor somewhat deeply so as to provoke a retching movement.

The major part of the right and left ulcer was removed by means of a punch-forceps for examination; our student, being easier in his mind, was most willing to furnish fresh opportunity for the study of the pathological tissue.

After the operation the patient suffered a good deal, especially on the left side where the pillar had been injured. The pain radiated as far as the left ear. The movements of deglutition were distressing, as happens pretty often in these cases. From the 3rd of the month the patient came each day to have the part painted with chloride of zinc, and he gargled for himself with bromide of potassium, carbolic acid, and eau de guimauve (*Althea*). On the 5th the cicatrices were on the way to recovery, and on the 7th the cure was complete.

The affection had, therefore, evolved simultaneously in both tonsils in a maximum period of eight to ten days, seeing that the patient investigated these ulcerations from the commencement, and we were able to follow them afterwards step by step.

Case 7. Acute crateriform ulceration of the left tonsil.—Victor C., aged eighteen years, residing at Bordeaux, presented himself at the clinic on Monday, July 2nd, 1894. He stated that his tonsil had become large in about a week, and that he found some difficulty in swallowing, but without any other inflammatory symptoms in the back of the throat. The voice was normal, the pulse and the appetite fairly good. (*Vide Fig. 2.*)

On examination there was found an ulcer strictly limited to the anterior and median portion of the left tonsil; it had a notched appearance, and there detached itself from it a granular excrescence about a centimètre in length, and in the form of a reddish stalactite. This excrescence was removed by means of forceps. The pulaceous covering which was fixed in the tonsil was small in quantity. The ulcer which we have drawn and reproduced in the plates was the size of a half-franc, and oval in the vertical direction. There was no swelling, no peripheral infiltration, and no enlargement of glands. In the way of treatment a borax and bromide gargle was ordered. The patient returned on the 5th July; the inflammation had considerably diminished, and there remained a greyish cushion situated behind the anterior pillar. On the 9th the ulceration was clearing up; on the 15th the one on the upper part of the tonsil had healed, but within the last two or three days the patient complained of pain on that side of the throat, and there was found on examination, on the anterior portion of the inner surface of the left tonsil, and below the former one, a greyish, rounded crateriform ulcer, measuring about half a centimètre in diameter. It had the same appearance as the first without being continuous with it. Applications of chloride of zinc of 1 in 50 were made, and the patient continued his borax gargle. On the 19th the ulceration of the lower part had almost disappeared; on the 23rd it was completely healed, and on the 30th the recovery was maintained, and in the place of the two ulcers there was found an excavation, leaving an indelible mark on the affected gland. The rest of the tonsil, which was very slightly enlarged, presented no trace of any lacunar or caseous lesion.

Case 8. Ulcer of the Right Tonsil.—M. A., aged twenty-seven, without profession, came to consult me on the 13th October, 1894, complaining for the las

seven or eight days of discomfort in swallowing, and a bad taste in the mouth. He was rather subject to acute tonsillitis, and for a long time had had the intention of having himself freed from his tonsils, which were much enlarged and lacunar. However, he never remembered having had a sore throat of the same persistence as this one. External examination revealed nothing in particular; there was no enlargement of glands, and no pain on pressure. Inspection of the throat revealed to me hypertrophy of both tonsils, and, in addition, on the base of the right one, close to the tongue, but well on the internal surface of the gland, I perceived a large crateriform ulcer of a rounded shape, and having the dimensions of a half-franc piece. The borders were red, projecting, irregular, without, however, there being any peripheral infiltration; the soft palate, the uvula, and the pillars were normal. The floor of the ulcer was greyish, pulpy, and when wiped, red, sanious, and very irregular, its depth being such that the pledget of wool disappeared almost completely within it. (*Vide* Fig. 3.)

Application of chloride of zinc of one in thirty, iodated gargle. Two days later the ulcer began to get cleaner, the floor was pinker, the borders less prominent, and cicatrization was taking place with rapidity. Four days afterwards the ulcer was nearly healed, its margin cicatrizing with an astonishing degree of rapidity.

When the patient returned a few days afterwards he had completely recovered, and one saw in place of the ulceration a loss of substance sharply punched-out, of which the borders were smooth and uniform. From this time the patient has had no further sore throat of this kind although he has not yet had his tonsils removed.

Lastly, we have to narrate a case quite recently under observation in the clinic of the Medical Faculty occurring in the person of a new student who came to consult within the last few days on account of an ulcerative tonsillitis resembling those preceding.

Case 9. L. M., twenty-three years of age, a student of medicine, father and mother still alive and in good health. It is interesting to note that his grandfather, who was subject to angina, was submitted at Montpellier, where he studied medicine, to amputation of the uvula, and removal of the tonsils. No syphilitic nor tubercular antecedents. Of previous illnesses he had had measles and numerous sore throats. There were some herpetic manifestations on the penis, although apart from any sexual relations. At the age of eleven, when he was at college he had a severe sore throat, which was treated by Dr. Dudon, and which soon got well.

When sixteen years of age, he had a fresh sore throat during an epidemic in a college at La Rochelle. Dr. Pichez cauterized the left tonsil, which had presented no further inflammatory appearances. During last January he had a fresh sore throat and Dr. Faguet interdicted the use of tobacco. The disturbances settled down after a few days. However, from this time the back of the throat remained very red, easily irritated whether by tobacco smoke or by hard food, or even by singing, which had become almost impossible. Exactly twelve days before, he felt in the evening a slight discomfort in swallowing, and noticed a little swelling of the glands on the right side. At the same time the wisdom tooth of that side approached the conclusion of its eruption, and some stumps of mucous membrane which were continually being caught between the teeth were the seat of a considerable degree of pain. Next day the discomfort persisted, as did also the ganglionic enlargement, and finally on the third day, being struck by the offensiveness of his breath, and anxious owing to the persistence of pain, he examined his own throat and found that the right bucco-labial groove, as well as the teeth of the same side, were covered with a layer of a substance having all the

characters of pus, grumous, tinged with blood, extremely foetid, and strewn with particles of a caseous rather than a liquid nature, resembling sphacelated mucous membrane. On the other hand, the right tonsil considerably increased in size, presented on its inner aspect a whitish surface, cleanly marked off from the surrounding tissues, which were very red; its surface was elliptical in form, with the major axis vertical, irregular, fungating, and having all the characters of an ulcerated piece of mucous membrane. He gave up the use of tobacco for three days, and alternated gargles of carbolic acid and of chlorate of potash. (Fig. 4.)

The pain diminished, the feverishness which was present on the previous evening disappeared, but the glandular swelling persisted. The patient continued up to the time when he was examined at the clinic without any other treatment except the carbolic gargles.

At this time, that is to say, the 22nd of April, I observed on the right tonsil, which was slightly red, but not swollen, a fungating ulceration with notched borders and with a soft floor easily penetrated by the armed wool-holder. All trace of adenitis had disappeared. The patient would have doubted even the existence of the lesion if he had not been able to see it, and been somewhat frightened at the appearance of the ulcer.

I showed the case on the same day to the Anatomical Society of Bordeaux, and immediately afterwards I submitted him to a course of applications of chloride of zinc of 1 in 30. Afterwards I prescribed a borax and bromide gargle, avoidance of tobacco and of any irritant for several days.

There is no doubt that in this case the eruption of the wisdom tooth on the one hand, the smoke and heat of the cigarette on the other, were among the factors producing the unusual duration of this ulcer which the patient had only perceived by accident when examining his own throat three days after the commencement of the malady. As in all our other cases, he recovered very rapidly, and one can still see the large cicatrix which has succeeded to the loss of substance resulting from the necrosis of a portion of the tonsil.

We will go no further with the description of our cases, reserving certain of them for one of our pupils, who is making this study the subject of his inaugural thesis.

Translated by Dundas Grant.

Treatment of Noises in the Ears. By Drs. MIOT and HERCK.

The authors have found an absence of any proper classification amongst otologists of these conditions, and have themselves formulated the following scheme.

I. Buzzing and noises subjective and objective; real noises, periotic and entotic, perceptible generally both by the physician and patient.

II. Noises properly so-called; noises and sensations without apparent acoustic cause.

1. Noises due to a lesion of the auditory apparatus.
 - (a) Noises in diseases of the external ear.
 - (b) Noises in diseases of the middle ear.
 - (c) Noises in diseases of the internal ear.
2. Noises compatible with the integrity of the auditory apparatus.
 - (d) Noises in diseases of the nervous system.
 - (e) Noises in mental diseases.
 - (f) Noises due to any affection whatever, or reflex noises.

Though treatment is often unsuccessful, the best means to deal with them is to recognize their real cause, and to note with the greatest care the results furnished by the exploration of the ear and the entire organism. The cause being known, we try to suppress them by treating the initial affection—*i.e.*, the middle ear, the rhino-pharynx, the various organs having a manifest action upon the ear—as well as by the employment of various accessory measures. In general, sonorous sensations of which the tonality varies, or which cease at times, are more easy to cure than those which have steadily progressed and increased the deafness. Noises are very often rebellious to all treatment when they are not due to an affection of the external ear (*bruissements*). Pulsations (*battements*) are more easy to modify if they are not due to arterio-sclerosis or aneurism.

Buzzings (*bourdonnements*), accompanied with psychical troubles, hallucinations of hearing, often resist all treatment.

General means.—There are certain general rules as to treatment which must be observed, the first and often the most important of which is to put the patient under good hygiene, removing all causes of excitation of the nervous and circulatory systems, treating individual organs and putting the patient under the best general condition to support a specific treatment of the sonorous sensations.

I. *Entotic or periotic noises.*—Generally perceptible by the physician as well as the patient. Due to circulatory causes (carotid, internal auditory artery, jugular veins, lateral sinus); muscular contractions (tensor muscle of the membrane, stapedius); movements of the tympanic membrane and the tubal walls, or displacement of the mucus in the tympanum. The perception of these noises is favoured by all agents increasing the resonance of the ear and by hyperæsthesia of the auditory nerve.

II (A) *Noises due to an affection of the external ear.*—In the various conditions of the external auditory passage, noises are produced (1) by hyperæmia of the soft tissues of the canal and of the tympanum, or reflex actions on the muscles of the middle ear, the branches of the auditory nerve, etc., such as foreign bodies or injections made at too great a pressure, which may even be the causes of fatal accidents; (2) by obliteration or hyperæmia of the canal by pressure exercised on the tympanum, and consequently on the perilymph, and probably by reflex actions on the labyrinth, such as by masses of cerumen and epithelium; (3) other conditions, more numerous, from inflammation of the tissues, more or less acute, and probably reflex action on the internal ear. Such are the various circumscribed otitides (furuncular, parasitic, or diffused); diffuse external otitis, syphilitic (condylomata), and diphtheritic.

(B) Noises due to an affection of the middle ear (*a*) by tympanic cavity; (b) Eustachian tube; (c) tympanum.

(A) In the numerous affections of the tympanic cavity and Eustachian tube, there are noises which may depend:

1. *Upon an inflammatory condition of the mucous membrane susceptible of producing in some cases a hyperæmia of the labyrinth, which is advantageously treated by refrigerants and blood letting.*—The authors have seen excellent effects from even very slight bleeding in various conditions of the ear acutely painful, they have often known the pain and noises diminish

or cease quickly after the application of one or two leeches, and they ask why this efficacious treatment is so much neglected to-day. Concurrently with these antiphlogistic measures, insufflations of air, or vapour of water (pure or medicated), are made with a catheter to the middle ear. Purulent collections must be evacuated, and if they are formed in the tympanum (*caisse*) or cells they conform to the indications of the case.

2. *Of a mucous membrane sub-acutely or chronically inflamed (catarrh of most authors) with or without obstruction of the tubes.*—The permeability of the tubes, if necessary, is re-established by insufflations of air, absorption is facilitated by insufflations of air, medicated or not, applied to the middle ear, or the collection is evacuated by incision of the tympanic membrane. Where the noises are produced by contraction or obliteration of the Eustachian tube, bougies are used; or the cicatricial tissue has been destroyed by galvano-cautery, or we may go so far as to advise the employment of a sharp sound (Saissy) to perforate the obstacle, when there is an obliteration of the tube. Outside the cases modifiable by simple means and general treatment (syphilis) we can scarcely rely on stronger measures (cautery, sound). It has also been advised to make a perforation in the drum and maintain it permanently. This result does not appear to be very easily attained, if we may judge by the numerous procedures recommended. Miot prefers that indicated in his remarks on artificial perforation of the drum, although that of Wreden has sometimes given him good results.

3. *On a chronic condition, with excessive dryness of the mucous membrane (dry median otitis, sclerosis).*—Although there is no curative treatment, we may indicate (1) centrifugal pressure by "Delstanche's Masseur" or Bronner's method; (2) insufflations and medicated injections to the middle ear, a solution of iodine in liquid vaseline being the most active; (3) inunction with resolvent ointments, excitants or revulsives such as flying blister, hot points, the action of which is frequently incontestable but not durable; a more or less durable result can be obtained by a galvanic current, according to the method of Bronner or Benedict. Galvanism, in the opinion of the authors, is a most valuable means of acting in a temporary or lasting manner upon subjective noises; if the noises appear to depend upon relaxation or tension of tympanic synechiæ, refraction of a mucous fold or of a tendon, synechiæ, ankylosis true or false, cure may be obtained by artificial perforation of the tympanum, myringectomy, dissection of the adhesions, section of the posterior pocket, section of the anterior pocket, tenotomy of the tensor tympani muscle, tenotomy of the stapedius, mobilization of the stapes, ablation of one or more ossicles. These various operations, more or less in favour amongst specialists, nearly always give immediate results when they are well indicated, but, unfortunately, the sclerotic modifications of the tympanum and labyrinth generally increase and cause the good effects obtained to disappear after a short time. Adjuvant treatment (instillations and injections) is mostly ephemeral; there have been tried:

1. Bromide of potassium in large doses, especially where there is a neurasthenic condition; it produces sleep and diminishes the noises.

2. Quinine, with or without iron, considered by Toynbee the most

useful treatment for subjective noises and often producing an energetic effect, when the noises occur in violent attacks, as in Ménière's vertigo ;

3. Iodide of potassium, internally or by inunction over the mastoid apophysis, principally indicated in syphilis and sclerotic degeneration of the middle ear and labyrinth as a specific or resolvent. All sorts of liquids (hot water, ether, balsam, glycerine, the two latter of which often diminish for a long time the subjective noises of the tympanic membrane) have been distilled into the external auditory canal without obtaining any lasting effect.

Subcutaneous injections of morphine, nitrate of strychnine, nitrate of pilocarpin, have sometimes a pretty lasting effect.

4. *Noises due to an otorrhœa*.—Where there is persistent perforation of the drum there are sometimes noises which diminish and finally cease according as the mucous membrane of the tympanum is modified under the influence of auricular treatment ; when they are very strong we have sometimes used with success, a continuous current of six to eight millampères intensity for five to ten minutes—the positive pole under the lobule and the negative pole over the neck or forearm of the opposite side. Revulsives over the mastoid apophysis sometimes produce good effect, but vesicatories may much increase the congestion during the sub-acute stages, and even determine a facial paralysis (Miot).

5. *Noises of tympanic origin*.—Foreign bodies, even when small, may cause violent noises ; it is sufficient to extract them in order to obtain a cure. Acute or chronic myringitis causing noises, being generally connected with affections of the external or middle ear, must be treated *secundem artem* ; ruptures of the tympanum give rise to noises which depend in certain causes on lesion of the membrane, but in others upon concussion of this organ. In the first case, cicatrization of the wound must be obtained ; in the second, the pathological conditions of the labyrinth and nervous centres must be modified by the treatment indicated further on.

Relaxation of the tympanic membrane.—Sometimes noises are produced from the pressure of the relaxed parts on the stapes. Collodion (MacKeown), if the relaxation is not accompanied with too great atrophy of the fibrous layers, and artificial perforation in the opposite case give the best results.

Synechiæ.—These cause noises by exaggerating the tension of the apparatus of transmission (drum and ossicles), Endeavour should be made to hinder the formation of these during the acute stage, by daily and repeated insufflations of air.

In the chronic state they can be made more loose, broken or destroyed. Collodion is best to lengthen them and diminish the tension of the organs of transmission, and the authors have obtained excellent results in extensive synechiæ, severe noises, and great deafness.

Where not successful, surgical intervention is necessary.

Exaggerated tension.—When due to cerumen and epithelial layers in the internal auditory canal it is easy to suppress the cause and cure the noises ; or when due to the Eustachian mucous membrane being tumefied. But if the tension is due to retraction of the mucous membrane, or of a

muscle, as *e.g.*, in dry median otitis, a surgical operation could only give ephemeral results in most cases. The only treatment is palliative, such as has been indicated for dry median otitis.

c. Noises combined with a pathological condition of the labyrinth.

(a) *Anæmia of the labyrinth.* If it is generally the consequence of general anæmia, which can be treated with success by tonics and general hygiene, it is due in other cases to aneurism of the basilar artery, to compression, to atheroma of the auditory arteries, that is to say, to lesions which it is not easy to modify by any treatment.

(b) *Hyperæmia.* In a general manner the treatment depends on the general cause; if there is cerebral or facial congestion there is an absolute indication for the application of cold to the head (Leiter's coil) or blood-letting. A little later we may obtain good results from the employment of cutaneous revulsives to the mastoid region, intestinal derivatives, large doses of bromide or iodide, pilocarpin injections or galvanization of the great sympathetic. If there is no congestion of the face, blood-letting often increases the subjective noises (Politzer), and ought only to be employed with the greatest reserve. Medication and cutaneous revulsives can be prescribed. If the hyperæmia is of old date, they may be tried, without, however, much chance of success—the treatment indicated for chronic labyrinthitis. In the case of severe shocks (*ébranlements*) of the organ of hearing having produced hyperæmia we may remember that sonorous sensations of traumatic origin generally cease themselves after lasting a certain time. The only thing necessary in these slight cases is to close the auditory meatus a little with cotton-wool, and advise the patient to avoid noisy places. Intestinal derivatives, mustard foot-baths, are useful adjuvants. For hyperæmia following upon scarlatinal suppurative median otitis, it is necessary to treat the otitis and complete the medication by appropriate means.

(c) *Effusion.*—When these occur in the semicircular canals and vestibule (Ménière's disease), in the labyrinth (Toynbee), in the vestibule (Passavant, Politzer), in the semicircular canals (Lucae), and the helix, there are generally very inconvenient noises which may be modified or got rid of.

Immediately or a very little time after the hæmorrhage, refrigerants, then blood-letting revulsives, intestinal derivatives and sulphate of quinine may be employed—the latter prescribed for ten days (Politzer). When all active condition has disappeared *i.e.*, towards the third week, pilocarpin injections are indicated and iodide of potassium internally, and applications of a continuous current to the sympathetic (superior cervical ganglia) for the severe subjective symptoms of Ménière's disease. Charcot has successfully prescribed sulphate of quinine; salicylate of soda and salicylic acid, having a similar action upon the auditory organ as quinine, may be prescribed. This treatment generally diminishes the noises after having increased them, exaggerates the deafness, and is truly useful only during severe crises. It is better to continue it only during fifteen days, to employ cutaneous revulsives, injections of pilocarpin and galvanization of the sympathetic. In effusions into the labyrinth the semicircular canals being free or little affected, quinine acts better than in Ménière's

disease, and should be prescribed after Politzer's indications. The other treatment mentioned previously applies to all cases; the probable cause ought to be determined and appropriately treated, as for example, in the noises due to effusion of blood due to a lesion of the heart and vessels. Great importance must be attached to the treatment of cardiac affection. In many cases it will be useful to act upon the arterio-sclerosis by prescribing an iodized preparation.

(d) *Inflammation of the labyrinth.*—Noises and other subjective symptoms may be produced suddenly in children and affect the tympanum and the labyrinth (panotitis of Politzer) or occur in the course of an infectious disease, like scarlatina or diphtheria, variola, cerebro-spinal meningitis, sporadic meningitis, cold (rheumatismal otitis of Triquet). Antiphlogistics are indicated, and later pilocarpin injections, iodide of potassium and galvanization of the sympathetic.

(e) *Chronic labyrinthitis.* These consist of divers hyperplasias or degenerations following upon hyperæmia, hæmorrhages or inflammations. Such are thickenings of the membranous labyrinth, connective tissue of recent formation, cellular infiltration, connective or amyloid fatty degeneration, exaggerated vascularization, calcareous or pigmentary concretions, alterations of the labyrinthine liquid. Although rebellious to treatment, the best is subcutaneous injections of pilocarpin, galvanization of the sympathetic, cutaneous revulsives over the mastoid region and iodides internally. In certain rebellious cases of specific labyrinthitis iodides or sulphuretted mineral waters may give benefit along with specific treatment. Galvanization appears to do no good.

(D) *Noises in diseases of the nervous system.*

We find such as a premonitory symptom of apoplexy, anæmia, and cerebral congestion, cerebral softening from thrombosis and the arterio-sclerosis of old people, tumours, compression and aneurism of the arteries of the base of the cranium. In acute bulbar myelitis and in compression of the bulb, these are phenomena of excitation in the nervous territory of the compressed root. In tabes the subjective auricular sensations with integrity of the transmitting apparatus, are due to an alteration of the receptive apparatus, an auditory neuritis. Lastly, we often find noises at the commencement of peripheral paralysis of the facial, in cervical occipital neuralgia and in neuroses (epileptic aura, cephalic aura, neurasthenic migraine). The causal disease must be treated and the nervous erethism calmed, which so often exaggerate the morbid symptom. These often occur amongst nervous, irritable people under great tension or following upon extreme grief. Treatment is anti-nervous, tonic, etc.

(E) *Mental diseases.*

Hallucinations, which are perceptions without object, often originate in the sense of hearing. In their simplest form these are confused noises coming from all directions. Deafness appears to provoke them. In a great number of cases, there is a congestive condition of the brain. The treatment should be cold compresses to the head, bromides, purgatives and prolonged hot baths. In the insane, false perceptions of hearing being much more frequent than those of other senses, we are often called upon to treat them. It is then necessary to determine if there is not an

auricular affection, however small, the careful treatment of which will lead to the cessation of the noises and the other phenomena which depend upon it.

(F) *Reflex noises.*

Otologists are often consulted for noises which are independent of the hearing apparatus, and disappear when the diseases of other organs are treated successfully. Thus noises are often combined with a gastric lesion (gastritis, gastralgia, dilation, dyspepsia, etc.), but in these cases it is necessary to determine first of all if the patients, who are often arthritic, have no sclerous lesion of the ear, which is often overlooked at its commencement.

The subjective noises frequent in uterine affections should be attributed to an anæmic or neurasthenic condition of the patient.

DISCUSSION.

Dr. DUNDAS GRANT : The separation of subjective from objective noises of the ear is logical in theory but often impossible in practice ; for example, in the case of labyrinthine congestion it seems difficult to determine if the noise is of arterial or nervous origin, that is to say, whether the noise perceived by the patient is due to the mechanical stimulation of the terminal acoustic nerve-fibres by the pulsating labyrinthine arteries and strictly subjective, or to the acoustical stimulation of a hyper-sensitive auditory nerve, the patient hearing the sounds produced by the circulation—and therefore strictly speaking objective. He regretted that the authors had not mentioned the method of compression of the arteries going to the labyrinth, a little behind the mastoid apophysis, applicable to certain noises of the vascular variety, and mentioned by him at the Paris Congress of 1889. Certain patients find relief from the inflation of chloroform through the Eustachian tubes, practised twice a day with the author's auto-insufflator.

Dr. MIOT : Has the speaker obtained cures by compression of the vertebral arteries ?

Dr. DUNDAS GRANT : Certainly not, but I have seen patients who could give themselves much relief in this manner.

Dr. VACHER wished to call attention to the great relief which could be obtained in sclerotic otitis by the employment of the solution of three to four per cent. of iodine in acetic ether, some drops of which are introduced into the pavilion by Itard's sound. The action of the iodized vapour modifies the mucous membrane of the tympanum, giving to the patient a sensation of heat and diminishing the noises sometimes in a lasting manner. He also spoke highly of massage of the tympanum, exhibiting an instrument for the purpose which is also useful to irrigate the tympanum and apply antiseptics to the nasal pharynx.

Dr. BEAUSOLEIL could not see how this differed much from the masseur of Delstanche.

Dr. VACHER thought his instrument was simpler and more practical ; it was essentially an ordinary hydrocele syringe with a caoutchouc tube ending in a glass mouthpiece.

Dr. MIOT thought that a caoutchouc ball was generally sufficient and much less expensive.

Dr. VACHER maintained that it had not the power of his apparatus.

Dr. MOURE thought that all were agreed that all treatments could be useful at the beginning. Unhappily, sclerosing otitis pursuing its course arrives at a certain period when only amelioration will be produced, all has to be re-commenced, for the noises recur with greater intensity and tenacity. In reference to this I recall our discussions *à propos* of mobilization of the stapes; it was then maintained that this operation modified the noises. The silence which has been maintained since that time as to this proceeding seems to indicate that it has not given all the results expected of it. I may mention besides a certain class of noises which I have observed in some cases of maxillary sinusitis. It suffices to open the sinus and to empty it, to cause the immediate cessation of the noises.

Dr. MIOT: I reply to Dr. Moure that I entirely maintain what I have already said on the subject of mobilization of the stapes. It is the only treatment to be applied to dry median otitis when all other methods have failed. A notable amelioration is often obtained.

NEW YORK ACADEMY OF MEDICINE.

May 22nd, 1895.

Dr. D. BRYSON DELAVAN, *Chairman.*

SECTION OF LARYNGOLOGY AND RHINOLOGY.

Xerostomia, or Dry Mouth. By Dr. WALTER F. CHAPPELL

The patient is a woman, forty-six years old, a native of Denmark. Her family history is negative, with the exception of the fact that her mother suffered from epilepsy. There is nothing of interest in her personal history up to the date of her present illness. She was in perfect health until five years ago, when she began to suffer from a sensation of dryness in the eyes and nose, the symptom being intensified during her menstrual periods, and markedly lessened between them. Gradually the dryness increased, and extended to the mouth, tongue, pharynx, and trachea. She also noticed that she had to urinate more frequently. The parotid glands became swollen, and at times tender. About a year after the onset of these symptoms her teeth began to crumble, and had to be removed.

When the patient came under my observation in May, 1894, I found her in a very nervous condition, bordering on hysteria. The mucous membrane of the mouth, tongue, and pharynx was found to be red and dry. She expressed a constant desire to drink, and clean out the mouth. A small white patch was found in the lower part of the arytenoid space, which proved to be a superficial ulcer. The parotid glands were markedly enlarged, also the glands in the neck. Steno's duct was open. Her temperature was always slightly above the normal, ranging from 99 to

100 degrees Fahr. Mastication was difficult, and never produced any appreciable discharge of saliva. Taste was markedly impaired. The quantity of her urine was increased; it was of low specific gravity, and contained very little urea; it contained neither albumen nor sugar. About two months ago the woman had a slight attack of hemiplegia, from the effects of which she has not yet recovered. The dryness of which she complains has been unaffected by treatment, which consisted principally of nerve tonics and pilocarpin.

Thus far, twenty-two cases of this affection have been reported. The name xerostomia was applied to it by one of the early writers, as it was supposed at that time that the dryness of the mouth was the only symptom of the disease. It is now generally believed that the condition is due to some change in the central nervous system. Frazer has collected nineteen cases, in only one of which were the parotid glands enlarged. In a number of the cases there was dryness of the nose and conjunctiva. In the case I have reported to-night all these symptoms existed.

Dr. BEVERLEY ROBINSON: About six months ago I saw a case which bears some similarity to the one presented by Dr. Chappell. The patient was a middle-aged woman, living in New Jersey. She had occasional neuralgic headaches, and had generally been regarded as a gouty subject. She came to me complaining of marked dryness of the entire buccal cavity, somewhat more pronounced on the right side than on the left, and in connection with this there was a certain amount of pain or irritation at the roof of the mouth. She has been treated with all known remedies, and thus far without any success. Among other drugs, I tried moderate and repeated doses of chlorate of potassium, given internally, without a particle of effect. In order to lessen her sufferings, she is in the habit of keeping a foreign body in the mouth, and at night she places a small piece of brown paper over the roof of her mouth to prevent the tongue from coming in contact with it. She gets some slight relief from a local application of olive oil and the oil of wintergreen, three parts of the former and one of the latter. In this case there is no enlargement of the parotids. Her urine has been repeatedly examined, and shows nothing abnormal.

Dr. RICHARDSON: I saw a case about three years ago, which presented the same general symptoms as the one shown by Dr. Chappell. The patient was a woman, about sixty years old. The diminution in the quantity of saliva secreted was first brought to her attention by the fact that she was no longer able to lick postage stamps. Her urine became increased in quantity, and her teeth crumbled early in the course of the disease. When I saw her in 1892, the mucous membrane of the nose and mouth was pale and atrophied and dry, and she complained that she was unable to moisten her food. Various forms of treatment were employed, among them pilocarpin and applications of electricity, without avail. The woman also had a subacute conjunctivitis. The parotid glands were not at all enlarged.

Dr. CLARENCE C. RICE: I have never seen a case of this kind. It would be interesting to learn what relationship exists between this general dryness of the upper respiratory passages and the involvement of

the salivary glands. While it is quite common to see as dry a pharynx as this in cases of pharyngitis sicca, I was impressed with the case, which is very unusual. It is probable that the changes in the salivary glands preceded the dryness of the pillars of the pharynx in this dryness of the mouth. If that is so, then what is the pathology of these glandular changes? It may be tubercular or syphilitic.

Dr. ANDREW H. SMITH: I would like to inquire whether any case has thus far been reported in which these glands have been removed and their histological condition ascertained. Also, whether there was a dry condition of the alimentary canal, producing constipation.

Dr. CHAPPELL: So far as I know, no microscopical examination has ever been made to ascertain the nature of the glandular enlargements in these cases. The patient whom I presented suffers from obstinate constipation. The dryness of the mouth commenced four years before the enlargements of the parotids appeared. She was placed for a time on potassium iodide, as high as five drachms being given daily, without producing any effect on the glands.

Sarcoma of the Nose; Operation; Recovery. By Dr. THOMAS J. HARRIS.

This man is thirty-six years old. He first came under my observation in July, 1894, complaining of the presence of a growth in the nose and severe and frequent attacks of epistaxis, which had rendered him very anæmic. His symptoms had existed for two years before I saw him. There was absolute occlusion of the left nasal fossa, and the tumour protruded below, giving rise to constant dribbling.

After an attempt had been made to snare the growth under cocaine, ether anæsthesia was induced, and Boeckel's operation performed. The growth was found to be attached to the ethmoid, and its manipulation gave rise to profuse hæmorrhage, so much so that it was thought the man would die on the table. It was shelled out with the finger as rapidly as possible, and proved to be about as large as a good-sized hen's egg. The cavity was then packed with iodoform gauze. The man made a good recovery, and left the hospital at the end of ten days. The pathologist reported that the growth was a small round-celled sarcoma. The operation was done in July, 1894, and up to the present time there are no signs of a recurrence.

Tubercular Laryngitis; Recovery. By Dr. HARRIS.

This woman is sixty-eight years old. When I first saw her, about a year ago, she complained of excessive difficulty in swallowing. Upon examining the larynx I found that there was no involvement of the true and false cords; but the arytenoid cartilages were pear-shaped and very characteristic of tuberculosis in appearance, and there were ulcerations in the region of the ary-epiglottic folds, and the pyriform sinus, both sides. A hopeless prognosis was given, and the treatment was only undertaken at the woman's earnest request. The curette was first used, followed by an application of lactic acid, but without any benefit. A similar result followed the use of iodoform and a solution of silver nitrate. The

region was then again curetted and pure ichthyol applied, with an almost immediate favourable response. There were a number of recurrences, but since the first of last November there has been no return of the ulcerations. I regret to state that the sputum was never examined for tubercle bacilli, but no question suggested itself to a colleague—a very competent laryngologist, who saw the case in consultation—but that it was tubercular in character. The woman to-day is in very good health. She has no trouble whatever in swallowing.

A Case of Adenoma of the Nose. By Dr. HARRIS.

I intended to present this patient to-night, but he is unable to leave his bed. He is seventy-eight years old, and first came under my care eighteen months ago. He had then been under treatment for about two years for nasal growths, which were supposed to be myxomata, and which completely filled both nostrils, making nasal breathing impossible. I removed the growths with the cold snare and curetted the bases. They sprang from the ethmoid bone. There was a partial recurrence within a month, and then freedom for a year. The pathologist reported that the growth was a mixed form of adenoma. Last November there was a further recurrence in the left nostril, with pain and exophthalmos on the same side, and since then the patient has been gradually sinking. A radical operation is out of the question, because of the man's age. Dr. Jonathan Wright recently kindly examined a portion of the tissue removed, and agreed with the previous pathological report—namely, that the growth was an adenoma, or possibly a mixed condition. Bosworth, in his book, states that these growths are rarely met with in the nose, and reports only two cases. I shall report the case at greater length on some subsequent occasion.

Dr. JONATHAN WRIGHT: I was much interested in Dr. Harris's case of small round-celled sarcoma. I believe that in such a case the diagnosis should never be considered certain until a thorough trial with the iodides has been given. It is impossible, so far as I know, to make a positive diagnosis of small round-celled sarcoma with the microscope alone, and the possibility of syphilis should always be borne in mind.

I had the privilege of examining the specimen removed by Dr. Harris in his case of adenoma of the nose, and it was certainly very remarkable. It was as large as an English walnut, and almost entirely made up of convolutions and involutions of glandular epithelium. It was almost a pure adenoma, although here and there were scattered areas of small round cells, and some spindle cells, which were probably nothing but new connective tissue. This form of tumour is one of the greatest rarity in the nose. It has been found a number of times in the larynx, and, of course, in other parts of the body. It is closely related to the epithelioma, but is of very slow growth, and a radical removal frequently insures a long period of immunity.

Dr. J. W. GLEITSMANN: I have no doubt that the diagnosis in the second case reported by Dr. Harris—that of tubercular laryngitis—was correct, but it would have been better had he obtained the report of a pathologist. I find no traces of tubercular disease in the larynx now. Before operating on cases of this character, I always make it a point to

have a special microscopical examination made, and in all of my cases the tubercle bacilli were found.

As regards the value of ichthyol in these cases, I believe that it is only one of a number of remedies, which will apparently relieve a tubercular laryngitis. Different remedies are applicable to different cases, and in order to be successful we must consider each case on its own merits and treat it accordingly.

Dr. CHAPPELL: I agree with Dr. Gleitsmann as to the importance of examining the sputum for the bacilli in these cases. In one case coming under my observation the patient had an ulcer on the epiglottis, which was supposed to be tubercular. Her chest was examined and found to be normal, and several examinations of the sputum gave negative results. I now feel convinced that the lesion is not tubercular in character, in spite of its appearance.

Dr. T. PASSMORE BERENS: In my hands, ichthyol has always given marked relief in cases of tubercular laryngitis. It seems to be almost a specific in healing laryngeal ulcers, either tubercular or syphilitic.

Dr. ROBINSON: While I constantly meet with cases of pulmonary phthisis without any evidence of involvement of the larynx, I can recall but very few cases, either in private or hospital practice, or even in the *post-mortem* room, in which the laryngeal process had advanced to the point of ulceration without finding clearly defined evidences of the same disease in the lungs.

Dr. DELAVAN: No one doubts that advanced tubercular laryngitis is pretty sure to be associated with pulmonary involvement, and probably all will agree that the word "cure" in these cases must be taken relatively. Of course, general tuberculosis cannot be cured by simply removing the diseased condition of the larynx. What is sought to be done, and what is being done with increasing success, in tubercular laryngitis is to relieve the distressing symptoms, to hold the disease in abeyance, and to put the patient in such a condition that if his pulmonary lesions permit he may be cured. To accomplish this is certainly a great advance in medicine, and one greatly to be desired.

Surgery. By Dr. JAMES E. H. NICHOLS.

This girl is nineteen years old. Seven years ago she innocently acquired syphilis while playfully using the pipe of an old syphilitic. When I first saw her, four years ago, the tertiary symptoms of the disease had manifested themselves. She had a syphilitic periosteitis of the superior maxilla, with an abscess, which I opened and curetted. There was a gradual destruction of the turbinated bodies and the septum, together with the roof of the mouth, and finally of the alveolar process of the superior maxilla. To correct the deformity, Rouge's operation was performed. Later on, the columnæ of the nose broke down and, as a consequence, that organ fell in and became very unsightly. Two months ago I tried to correct the deformity by inserting an artificial bridge, made of gold, and the cosmetic effect of this has been very gratifying.

Dr. F. E. HOPKINS said he saw the patient before the operation, and the deformity was one of the worst he has ever met with. Her present improvement in appearance is very striking.

The Importance of administering Iodide of Potassium in Cases of Laryngeal Disease of Doubtful Diagnosis. By Dr. CLARENCE C. RICE.

The more experience we obtain in clinical work, the more we appreciate how small a percentage of cases present the typical clinical appearances portrayed in the text-books. The fact cannot be denied that in spite of all the advantages now at our command to aid us in diagnosis, there are still a number of pathological conditions met with in the larynx where it is impossible to state positively, for a time at least, the exact nature of the disease. Among these, tubercular conditions might be prominently mentioned; these are often difficult to diagnose, unless we can find the bacilli. In many instances, too, much more frequently than we suppose, tuberculosis and syphilis coexist. Difficulty of diagnosis is also experienced in all those diseases of the larynx which go through an ulcerative stage, and are capable of producing so-called granulation tissue. The lesions of chorditis tuberosa, or singers' nodes, are often mistaken for syphilitic thickening. We frequently see changes in the vocal bands in simple catarrhal processes in which we are tempted to use the iodides. Also in granular trachoma. In one case coming under my observation a so-called papilloma of the larynx proved to be syphilitic, as was shown by its rapid disappearance under the administration of potassium iodide.

The lesions of syphilis in the larynx are often of an obscure nature, and the difficulty of diagnosis is increased when we cannot get any corroborative history or other signs of the disease. Whenever we have any doubt as to the character of a lesion, a thorough trial of the iodides should be given in order to exclude syphilis. In this connection it should be borne in mind, however, that some cases of a non-specific nature are benefited by potassium iodide, particularly when the drug is given in small doses, and even malignant neoplasms may show temporary improvement under its use.

Dr. DELAVAN: Care should be taken in diagnosing a case as malignant, unless it is fairly well advanced, until potassium iodide upon it has been studied. The fact should not be lost sight of, however, that the drug may produce a temporary improvement in malignant cases, and for a time mask their true nature.

Dr. ROBINSON: While in many doubtful cases of laryngeal disease potassium iodide is of unquestioned benefit, it is also true that in some cases of laryngitis, with a certain amount of stenosis and dyspnoea, unless we are very careful in administering potassium iodide, we may produce very unpleasant effects. The dyspnoea may be increased, and the inflammatory action aggravated. Furthermore, it is possible that at times potassium iodide will help inflammatory conditions in the throat and larynx which are of doubtful rheumatic or gouty origin.

Dr. ROBERT C. MYLES: Structural changes in the throat, as the result of syphilis, are much more rarely met with in this country than abroad. This is due, I think, to the more general use here of potassium iodide. I have in a number of instances seen the drug produce rapid relief in cases of marked syphilitic stenosis of the larynx.

Dr. RICE then closed the discussion.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY, LONDON.

Tuesday, April 23rd, 1895.

The President, JONATHAN HUTCHINSON, F.R.S., in the Chair.

Dr. FELIX SEMON (London). *The Probable Pathological Identity of the various forms of Acute Septic Inflammations of the Throat, hitherto described as Acute Œdema of the Larynx, Œdematous Laryngitis, Erysipelas of the Pharynx and Larynx, Phlegmon of the Pharynx and Larynx, and Angina Ludovici.*¹

In his introduction he fully stated the reasons which had induced him, in spite of the absence of bacteriological evidence of his own, to submit his ideas on the question of the nature of acute septic inflammation of the throat and neck to the judgment of the society. He next showed the confusion which at present existed in the nomenclature of these inflammations, and defined his own position by expressing his conviction "that the various forms of acute septic inflammation of the "throat and neck, hitherto considered as so many essentially different "diseases, were in reality pathologically identical; that they merely "represented degrees varying in virulence of one and the same process; "that the question of their primary localization and subsequent develop- "ment depended in all probability upon accidental breaches of the "protecting surface through which the pathogenic micro-organism, which "caused the subsequent events, found an entrance; and that it was "positively impossible to draw at any point a definite line of demarcation "between the purely local and the more complicated, or between the "œdematous and the purulent forms." This thesis was then proved, from the clinical point of view, by the communication, in order of ascending severity, of fourteen cases in point (two of them with full notes of *post-mortem* examinations) which had come under Dr. Semon's observation. It was shown that from the slightest cases, the septic nature of which could well be doubted, to the most severe and rapidly fatal ones, complicated by pleurisy, pericarditis, pneumonia, peritonitis, and septic infection of the central nervous system, such gradual and imperceptible transitions were met with, and that, again, the serous forms of inflammations so insensibly passed into the purulent forms, that often the greatest difficulties occurred in correctly registering a case in accordance with the present terminology.

Dr. SEMON then endeavoured to draw a consistent clinical sketch of the course of these inflammations, and to explain the differences in their primary localization and their various extensions. Next he discussed the various objections which could be raised against his views, viz.: (1) that no proof had been adduced that the milder cases given in his

¹ We are unable to publish this communication in full. The original paper will be found complete in the "Medico-Chirurgical Transactions," Vol. LXXVIII.

list were really of septic origin ; (2) that the different primary localizations in these cases spoke against their identity ; (3) that the variations in the fever curve also seemed to show that the individual cases were due to different pathological processes ; and (4) that the fact of the exudation sometimes being of a serous, sometimes of a purulent character from the bacteriological point of view, militated against his view of the identity of the pathological process causing these different forms of septic inflammation. In answering these objections he particularly dealt with the importance of the tonsils as forming a natural portal for the invasion of the organism by pathogenic microbes, and from the bacteriological point of view showed by quotations from Jordan's papers that his ideas, revolutionary as they might appear from the clinical aspect, in reality constituted a simple clinical application of general bacteriological principles to a certain group of septic inflammations. In conclusion, he urged the necessity of a sweeping revision of our present nomenclature concerning acute œdematous affections of the larynx.

The PRESIDENT thought that Dr. Semon was not really making an advance, but was falling back on old-fashioned views which had not been departed from by some. He was prepared to go even further than him, and to say that many of these diseases were transmutable. He doubted if œdema of the larynx was the same thing as erysipelas of the larynx, but the one might develop from the other. He believed that there was a contagious form of catarrhal laryngitis. He had seen a case of œdema of the larynx which ended fatally, and which appeared to be produced by exposure to cold, and not by exposure to septic influences. The virulence of these diseases might undoubtedly be intensified by transmission.

DR. DE HAVILLAND HALL said that the older writers entertained the view that these affections were identical. Four years ago Dr. Semon spoke at Berlin much to the same effect as in the paper now produced, and this induced Dr. Hall to look up his cases for the past seventeen years. As the result of that search he asserted¹ his belief that erysipelas of the larynx, phlegmonous pharyngitis, and angina Ludovici were so similar that the slight difference in their starting-point was not a sufficient reason for making a different classification necessary. He recorded seven cases. All these cases presented much the same clinical picture, and he regarded them all, therefore, as identical.

MR. LOCKWOOD said that much would turn upon the sense in which the term "pathological identity" was used ; for identity of bacteriological invasion was not necessarily the same thing as identity of disease. In acute angina Ludovici there was a streptococcal invasion, and the same was highly probable of acute inflammation of the pharynx, larynx, and tonsils. But an acute abscess might be found in the arm due to staphylococcus aureus, and a peritonitis might exist due to the same streptococcus, but yet no one would say that the diseases in the arm and peritoneum were identical ; it was necessary that there should be identity in the tissues which were attacked. In these inflammations about the neck and throat it was improbable that there was an identical bacteriological

¹ "British Medical Journal," February, 1892.

invasion in all. In one case, for instance, *staphylococcus pyogenes* had been found, while in other cases the presence of bacilli had not been given the prominence it deserved. Fœtor was common in angina Ludovici, and this was always due to a bacillus. In one case, again, bacilli were found which produced gas, and such a case could not be considered bacteriologically the same as those in which the *streptococcus pyogenes* was found. As to the tissues attacked, there was the widest difference; in one case the invasion might be about the epiglottis, and in another about the tissues of the neck. Though there was a clinical resemblance between these diseases, yet angina Ludovici often betrayed considerable clinical difference, due to a variation in bacterial invasion. Cutaneous erysipelas of the neck could not be described as angina Ludovici; it was very different, and the three varieties of erysipelas differed considerably amongst each other.

Dr. SHARKEY said that he agreed with the conclusions drawn by Dr. Semon from the clinical point of view. In the St. Thomas's Hospital Reports for 1892 he published three cases of angina Ludovici. The whole of these cases were instances of acute primary suppurative cellulitis of the neck, all occurring near enough to the larynx to produce intense œdema of the epiglottis, and the infection he regarded as probably of septicæmic origin. It was necessary to define what we meant by pathological identity, whether it referred to the question of some definite tissue being involved or to the localized or generalized nature of the disease. He thought, on the whole, that this clinical group of cases resembled each other as much as did examples of any one disease in other organs.

Mr. BUTLIN said that the subject, which was sufficiently complicated before, had been made still more so by the paper. The assertion was that these diseases were all septic, and that they were identically the same disease. Mackenzie in his work had already included these affections, with the exception of Ludwig's angina, under one head, and with regard to Ludwig's angina no accurate description of it existed. There was no sufficient proof in the paper that these diseases were identical, either in their appearances, their physical structure, their clinical characters, or their pathology. In a case like that of erythema nodosum we could be sure of the identity of the disease in different individuals; epithelioma also we could recognize from its clinical appearances and its structure. Tuberculosis differed enormously in its clinical characters, but its identity could be verified by the discovery of the anatomical tubercle coupled with the peculiar bacillus. In the diseases proposed to be classed as identical very few bacteriological examinations had been made, and very few inoculation experiments performed. Then the paper quoted observations to show that no less than ten microbes might produce the same pathological condition, and ten conditions might be the result of the action of one microbe. Though he had hoped that order and harmony might be evolved out of the group of conditions brought together, he was bound to admit with profound sorrow that after hearing the paper he was more confused than ever.

Mr. HARRISON CRIPPS said that he sympathized with Dr. Semon in

his desire for uniformity, but he could not admit that this goal had been attained. Many different pathological conditions might produce a similar affection. He referred to a case, under the care of the late Mr. Luther Holden, in which the patient suffered from gangrene of the thumb of the type of the acute septic gangrene of Larrey. The arm was amputated, and the patient at first did well, but three days afterwards the throat began to swell. The swelling attained very large dimensions, and was covered with black patches, and was evidently due to the same cause as the gangrene of the thumb, and in both parts of the body gas was developed in the tissues. Death ensued after twenty-four hours from suffocation. In the second instance a child had suffered from facial erysipelas, but had got well. A few days later the mother was taken ill with sore throat; the swelling increased rapidly, and she died from suffocation. The cause in that instance was undoubtedly erysipelas. In other parts of the body we might meet with swellings produced by different causes, and the neck was no exception to this rule.

Dr. STEPHEN MACKENZIE said the breadth of view displayed in the paper completely contradicted any idea that devotion to a special branch of the profession had the slightest tendency to lead to narrowness. Previous speakers had agreed that the various diseases described were allied clinically, but did not consider them pathologically identical. He considered the etiological factor in disease to be of great importance, and instanced peripheral neuritis as being due to numerous and dissimilar causes. Acute inflammation of the tongue, floor of the mouth and larynx might be due to herpes, and he quoted two cases, clinically indistinguishable from angina Ludovici, which after death were found to be associated with, if not due to, trichina spiralis and miliary tuberculosis respectively. He thought the author of the paper had rather cut the ground from under his own feet by quoting Jordan's bacteriological results. Without positive bacteriological evidence these various affections could not be considered to be pathologically identical.

Dr. DUNDAS GRANT thought that much good would result from this simple modification in the classification of these diseases suggested by Dr. Semon. His own experience tended in the same direction. Of the affections thus grouped together, typical angina Ludovici was the one least likely to be pathologically identical with the rest, since he had seen it secondary to disease of the teeth and also of the ears. He had been struck by the fatal tendency of such cases, quite apart from the respiratory embarrassment they might produce. He quoted a case of phlegmon low down on the pharynx, followed by various septic phenomena, such as facial erysipelas and wandering pneumonia, in support of Dr. Semon's contention. The term "Ludwig's angina" should be discarded, since it served as a refuge in cases of difficult diagnosis; the title "acute septic inflammation" of the throat would be preferable.

Dr. W. HILL said that since Dr. Semon's cases were due to different etiological factors, he wished to ask what was meant by the phrase "pathological identity." He quite agreed that the cases had a clinical resemblance to each other, but did not think they were alike from a pathological point of view.

Dr. KANTHACK would confine his remarks to the pathological and bacteriological aspects of the question. He had examined four cases of so-called angina Ludovici—(1) acute cellulitis of the neck following tonsillitis in which the streptococcus was present; (2) gingivitis due to dental caries in which the staphylococcus albus and aureus were found; (3) œdema glottidis and pneumonia in which the pneumococcus (Fraenkel) was found; and (4) phlegmonous inflammation in a pregnant woman who aborted and died of septicæmia; streptococci were found in the spleen and in the tissues of the neck. In these four cases various pyogenic micro-organisms were found producing various stages of the same process. Although bacteriologically distinct the processes were pathologically identical. The distinction between pathological and bacteriological identity was illustrated by the phenomena of ulcerative endocarditis. Clinically, and from the standpoint of morbid anatomy, ulcerative endocarditis was a pathological entity, but bacteriologically, at least twelve different microbes could be isolated. It was true that these micro-organisms were more or less allied, but this was equally true in the pathological conditions grouped together by Dr. Semon. The subject of dispute between clinicians and pathologists was really one about terms which had been invented long before the advent of bacteriology, and it was impossible and inadvisable to try to fit new views to old terms. He endorsed Jordan's views that different micro-organisms could produce conditions pathologically identical. The term "specific" should be employed with caution, since some morbid conditions were due to the interaction of several kinds of micro-organisms. The streptococci of erysipelas and of inflammation were indistinguishable. The same micro-organism might produce a local or a general morbid change; the determining factor was as yet unknown. Microscopically there was no essential difference between inflammation and suppuration; they were only different stages in the same process. In conclusion, he said the present state of pathological knowledge supported Dr. Semon's views.

Mr. R. W. PARKER thought that the micro-organisms found in the various forms of inflammation of the throat and neck were specific. He referred to the possible instability and difficulty of bacteriological research. Clinically he considered the conditions grouped together as essentially different, and thought that the old terms should be retained and not superseded.

Dr. SEMON, in reply, said the fact that most of the criticisms had been somewhat adverse did not surprise or discourage him. The immediate verdict was not always the ultimate one. In 1882, at the Clinical Society, he had brought forward the view that myxœdema, cachexia strumipriva (Kocher), and cretinism, both sporadic and endemic, were due to the same lesion, but it was then considered too simple to be true. The thesis in this paper had been brought forward as a working hypothesis, not as a proved fact. The paper was largely clinical, and he regretted that the discussion had rather neglected this aspect, and especially that nothing had been said about the rôle played by the tonsils as a portal for microbic infection. Much of the discussion of the paper had turned on the term "identical." Identity might refer to pathological

conditions, anatomical site, or clinical phenomena. By pathological identity was meant the occurrence of the same process in diseases which might appear to be different. The different kinds of inflammatory exudations passed by gradual transitions one into the other. All his cases showed violent exudations into the tissues and severe clinical symptoms. At first he regarded the cases as being merely closely allied, then noting slight variations in the locality of the affection, he became convinced that the actual site of invasion was accidental, and due to the presence of some abrasion, and that the morbid process was the same. Mr. Lockwood had said that to be identical a disease must not only be due to the same causes, but occur in the same tissues. If this was the case, tubercle must be considered a different disease in each organ or tissue of the body. He considered the various micro-organisms found in the cases thus grouped together as being interchangeable. Jordan's results were the collected opinions of the most eminent bacteriologists of the world, and not merely his own. He felt confident that in the future his views would be accepted, and quoted a recent paper in *Virchow's Archiv* by Kütner of Berlin and a pamphlet by Suchanek, which embodied exactly the same ideas.

Tuesday, May 28th, 1895.

The President, JONATHAN HUTCHINSON, F.R.S., in the Chair.

THOMSON (ST. CLAIR) and HEWLETT (London). *Micro-organisms in the Healthy Nose.*¹

The results arrived at contrast in a striking way with those obtained by the majority of previous observers, and are in direct opposition to the opinion held by many physicians and founded chiefly on *à priori* reasoning. About 500 litres of air, bearing on a low average 1500 organisms, are inspired every hour. As all, or at least the greater portion of this comes in contact with the moist mucous membrane lining the tortuous passages of the nasal fossæ, it has been taken for granted that the interior of the nose must show a rich profusion of micro-organisms. This conception is now widely adopted, and its general acceptance probably accounts for the scarcity of recorded observations of bacterioscopic examinations of the nasal cavity in a state of health.

The literature of the subject is gone over in chronological order. Only two papers have been found devoted entirely to the bacteriology of the normal condition; all other references to the healthy state are only made incidentally in the course of researches on diseased conditions. The most diverse results have been arrived at both as to the varieties and abundance of organisms met with. Only two authorities—Loewenberg

¹ We are unable to publish this interesting paper *in extenso*. The original article, containing details of the experiments and a full bibliography of the subject, will be found in the "Medico-Chirurgical Transactions," Vol. LXXVIII.

and Hajek—find a scarcity of bacteria in the nose ; others record a greater or less variety and profusion. One observer finds the streptococcus of Fehleisen present in one out of every five healthy individuals, and another found the *diplococcus pneumonia* (Fränkel-Weichselbaum) once in every four observations. This latter observer frequently met with the *bacillus pneumonia* (Friedländer), the *streptococcus pyogenes*, and the *staphylococcus pyogenes aureus*, and not only in considerable numbers, but sometimes in pure culture.

The method of examination adopted by the authors was that of cultivations on agar and cover-glass preparations stained with gentian violet. No attempt was made to differentiate the organisms met with. This research only dealt with the presence or absence of bacteria, and a simple method was adopted to insure uniformity of comparison. Thirteen healthy individuals were examined. Twenty-seven cultures and fourteen cover-glass preparations were made from the vestibule of the nose. Seventy-six cultures and thirty cover-glass preparations were made from the mucous membrane of the nasal cavity. The results are summarized as follows :—

1. In all bacterioscopic investigations of the nasal fossæ, in all researches as to the action of nasal mucus, etc., a clear distinction must be made between the vestibule of the nose and the proper mucous cavity. The former is lined with skin, and is furnished with hairs and with sudoriferous and sebaceous glands ; it is not part of the nose cavity proper, but only leads to it.

2. The neglect of this distinction may account for the discrepancy in previous observations on the subject. Contamination with the lining of the vestibule is difficult to avoid, even when this source of error has been realized.

3. In the dust and crusts of mucus and *débris* deposited among the vibrissæ of healthy subjects, micro-organisms are never absent. They are rarely scanty in number ; as a rule, they are abundant.

4. On the Schneiderian membrane the reverse is the case. The authors do not assert that micro-organisms are completely absent ; obviously some must occasionally occur, but under normal conditions they are never plentiful ; they are rarely even numerous, and in more than eighty per cent. of their observations no organisms whatever were found, and the mucus was completely sterile.

5. The occurrence of pathogenic organisms must be so infrequent, that their presence on the Schneiderian membrane can only be regarded as quite exceptional.

Clinical experience bears out the above conclusions, and their applications in practice is sufficiently obvious.

In conclusion, the authors touch upon the problems suggested by the above, and refer to the questions they are at present engaged in solving.

Mr. SPENCER WATSON thought that it was premature to conclude that the vestibule and the vibrissæ there filtered out nearly all the micro-organisms in the air entering the nose. Since the vestibule was ill developed and the vibrissæ were only represented by down in children, it was improbable that in them micro-organisms were thus arrested. The

authors might reply that children were in fact more subject to respiratory affections than adults. This might be so, but before drawing a definite conclusion as to this function of the vestibule and its vibrissæ, further observations on children were required. The greater part of the nasal fossæ was confessedly inaccessible to bacteriological investigation; the anterior part had been shown to be almost free from micro-organisms, but it was possible that the micro-organisms were carried past the smooth anterior parts, and then came to rest on the more convoluted inaccessible parts. He inquired how the automatic cleaning of the nose was carried out; was it by filtration in the vestibule or was it due to some active process in the deeper parts of the nasal fossæ, possibly phagocytic in nature? The rapidity and ease with which wounds of the nasal mucous membrane healed to some extent supported the authors' views, but wounds of the face generally, and especially of the eyelids, healed readily; possibly this was a result of the free vascular supply of the parts.

Dr. F. SEMON, while congratulating the authors on their paper, regretted that they had not differentiated the varieties of micro-organisms met with. He quite agreed that wounds of the nasal mucous membrane healed rapidly, and did not think it necessary to wash these parts with antiseptics before operating, but at the same time he drew attention to the fact that lacunar tonsillitis, now generally considered to be of septic origin, frequently followed, and apparently was secondary to, cauterization of the nasal mucous membrane. It was remarkable how the nose escaped the inflammations common in the lower regions of the respiratory tract. Tuberculosis of the nose was one of the rarest diseases met with in practice, and suppuration rarely occurred after nasal operations; these clinical facts were now explained by the authors' bacteriological researches. From a clinical standpoint he thought it unlikely that micro-organisms passed over the parts of the nose accessible to bacteriological examination, and settled in the deeper inaccessible parts.

Dr. ALLAN MACFADYEN said it was not an easy matter to make a bacteriological examination of the nasal cavities without the possibility of some fallacy creeping in. In this instance the conjunction of a rhinologist with a bacteriologist had added greatly to the value and the accuracy of the results. The preconceived notion of most medical men was that the nasal cavities swarmed with microbes. From the nature of things one would be tempted to think that such was the case, and the most interesting part of the paper was precisely that which proved that this was not so; that while the vestibule contained a large number of microbes the mucous membrane of the cavity proper had few or no organisms. No doubt the discrepancies which had occurred in the results obtained by other observers were largely due to the want of a clear distinction between the vestibule itself and the cavity proper. These results were striking because they had taken the maximum number of micro-organisms likely to enter with the inspired air during an hour, and they had shown that the vast majority of these had disappeared before they had reached the upper portions of the nose. It showed what an efficient filtering apparatus the nasal cavity was for impurities of all kinds. No doubt a good part of this result might be

due to the mechanical action of the vibrissæ and the presence of sticky mucus; still a certain number of organisms must pass up, and the question arose as to what became of them. That brought up a very interesting question as to the possible action of mucus upon organisms. It might be that the mucus did not furnish a suitable soil for the growth of bacteria, and consequently that they degenerated and died, or that the mucus itself had a bactericidal action upon bacteria. He referred to the investigations of Santorelli in respect of sputum. He found that most organisms died or lost their virulence under its influence, with the exception of the diphtheria bacillus. Still, there was a possibility of pathogenic material remaining for a very long time in the nasal cavities.

Dr. HABERSHON said the paper possessed a double interest, especially to rhinologists, in its bearing on operations, and the question how far the pathogenic organisms could be absorbed in this situation. There was also a special bearing on the clinical and pathological side as to how far absorption might take place from the healthy mucous membrane. Some years ago when he was working at Vienna a view was very generally held that all the portions of the mucous membrane that were covered with ciliated epithelium were not the first to be infected, this being explained on the ground of the mechanical action of the cilia in moving on the organisms and so preventing absorption. There were certain pathological facts in support of that view. Some years ago he worked out the question with regard to the larynx, and he found that those parts of the larynx that were covered with ciliated epithelium were not so frequently affected, at any rate in the first instance. Possibly the same cause might prevent the nasal mucous membrane from being the seat of absorption in respect of pathological micro-organisms. He had recently met with four successive cases in which the tonsils were evidently the seat of absorption of the tubercle bacillus and probably the starting-point of the whole disease.

Dr. HEWLETT, in reply, said that, although it was mentioned that many microbes were arrested by the vibrissæ, it was not stated that this was the essential factor which prevented the microbes getting into the nose. With regard to the method of self-cleansing this was a point which was engaging attention, and there were, of course, several factors to be considered. One important factor was that suggested by Dr. Habershon—viz., the protective power of a ciliated surface. Then, too, there was the question of phagocytosis, but this was probably subsidiary. Another point, probably of great importance, and which some experiments seemed to bear out, was that the nasal mucus appeared to be a very bad nutrient medium for microbes. This was borne out also by certain experiments carried out in respect of vaginal mucus. This quality, at any rate, prevented the rapid multiplication of the microbes, such as might be seen in the mouth, etc. Then there was the mechanical action of the mucus, which was constantly trickling over the surfaces, and must necessarily carry down microbes and dust. Similar observations had been made in respect of the freedom from microbial invasion of the conjunctival *cul-de-sac*. With regard to the arrest of

bacteria, they had made a good many observations as to this, but they had been rather a failure.

Dr. ST. CLAIR THOMSON, in reply, said that they had not attempted to deal with the character of the bacteria met with. This had been their original purpose, but when their experiments showed how rarely micro-organisms of any kind were found in the nose they decided to publish this fact by itself. Mr. Spencer Watson's objection had previously occurred to him with regard to the vestibule of children's noses, and he had made a point of examining as many of their noses as possible. In all of them he had found that the nares were lined with down which was well moistened with mucus, and frequently showed collections of dust. It was difficult to imagine that any microbes could escaped impinging on the mucous surface of the anterior part of the nose. He did not wish to discuss the pathology of lacunar tonsillitis after operations in the nose, although he had read the papers referred to by Dr. Semon and was aware that French observers regarded it as a septic infection. With reference to the part played by ciliated epithelium he mentioned two observations by Sir Joseph Lister. The first referred to collections of blood and pus in the pleural cavity; when this communicated with the external air through the bronchus, the pleural contents became septic much less readily than in those cases where there was a communication with the air through the side wall of the chest. This difference he ascribed to the action of the ciliated epithelium in the former case. The second observation referred to cases of fracture of the base of the skull involving the middle ear with rupture of the drum. Lister was in the habit of insisting on the necessity of keeping the external meatus aseptic, as he held that most of the after mischief of these cases (excluding mechanical compression and irritation) was due to septic infection. When it was suggested that the entrance by way of the Eustachian tube was unprotected, Sir Joseph Lister held that this approach was sufficiently guarded by its lining of ciliated epithelium.

THE INTERNATIONAL CONGRESS OF OTOLGY.

As already announced in these pages, the above congress will be held in Florence from the 23rd to the 26th of September. This will be the fifth of these international meetings, and at the previous one, held in Brussels, a committee was elected to favour the proposal of inviting the sixth congress to meet in London. A circular has been issued by the English committee, suggesting that the London meeting should be held in 1897; but the President elect (Prof. Grazi), while expressing himself as most favourable to this idea, proposes that the date should be 1899, or, better still, 1900 ("Bollettino delle Malattie dell'Orecchio," June, 1895). As this is a point which most closely concerns our compatriots, it gives another reason for renewing the hope that Great Britain will be well represented at the Florence congress.

Intending *congressisti* who have not already sent in their adhesions should forward their names to Dr. BOBONE, San Remo, Italy.

Reductions of fares will be obtained on the Italian railways, and particulars as to routes, hotels, etc., can be obtained from Dr. ST. CLAIR THOMSON, 28, Queen Anne Street, W.

REVIEW.

Dench, E. B.—*Diseases of the Ear*, a Text Book for Practitioners and Students of Medicine. By EDWARD BRADFORD DENCH, Ph.B., M.D., Professor of Diseases of the Ear in the Bellevue Hospital Medical College, Aural Surgeon New York Eye and Ear Infirmary, Fellow of the American Otological Society, of the New York Academy of Medicine, of the New York Otological Society, of the New York County Medical Society, etc. With 8 coloured plates, and 152 illustrations in the text. London: Henry Kimpton, Hirschfeld Bros., 1895.

THOUGH it cannot be said that there is any present dearth of systematic works on diseases of the ear, there can be no hesitation about the welcome justly due to the present one. It contains much that has not yet been incorporated in any one book, but has for some time been more or less current coin among the more advanced otologists in all countries. Monographic and journalistic writings by Dr. Dench have come periodically under our notice for the purpose of analysis in these pages, and in view of the qualities presented by them our readers will undoubtedly be eager to possess a work containing his otological teachings in a complete form.

The stereotyped sequence of chapters is followed, but the amount of space devoted to the different subjects varies somewhat from what we are accustomed to. Although the diseases of the perceptive mechanism—labyrinth, auditory nerve, auditory central organs—are disposed of in about fifty-three pages, their differentiation from each other is laid down with exceptional fulness, a number of relatively new points in diagnosis being brought forward, so that the study of the subject is made more satisfying than usual. Among the newer points we may mention the tests for the lower limit of audition, as insisted on by Bezold; the differentiation between lesions of the labyrinth, trunk of auditory nerve, and auditory centres (pp. 583, 584), by the methods so forcibly emphasized by Gradenigo in Schwartze's handbook; the explanation of the diminution of bone-conduction sometimes present in very rapidly evolving cases of Eustachian catarrh (p. 64); Gradenigo's test for exhaustion of the auditory nerve, and its clinical significance (p. 165); the value of Rinne's test with forks of different pitch, in judging of the amount of middle-ear affection present in cases of combined obstructive and perceptive deafness (p. 563), etc., etc.

The chapters on disturbances of audition accompanying general constitutional diseases (xl.-xli.) and organic (xxxix.) or functional (xlii.) affections of the nervous affections are clear and concise, the last-

mentioned, including neurasthenia and hysteria, being of exceptional interest. The influence of these two conditions on the auditory faculties acquires, in the reviewer's mind, a greater and greater importance as his experience increases. Without a due appreciation of their effect, and without an adequate acquaintance with their diagnostic features, the aurist will find himself constantly inveigled into those errors of diagnosis, prognosis, and treatment which are the bane of a too narrowed specialism. Dr. Dench's book is a highly enlightened protest against this evil, and as such we most strongly recommend its study. In intra-tympanic operative interference he is an ardent "progressive," and many advancing otologists will hesitate to emulate his surgical ardour, but none will withhold their admiration for the masterly methodization and detailed technology of the possible operations, affording as they do a powerful incentive to the cultivation of that manipulative dexterity, whose acquisition is one of the chief *raison d'être* of the specialist, and in which the aurist might take a worthy example from the practitioners of ophthalmic surgery. The results of his operations (pp. 512, 513) compare rather favourably with any hitherto at our disposal, the operative measures being in general in non-suppurative inflammations, removal of the membrana tympani, malleus and incus, and mobilization of the stapes; in "residual" purulent cases mobilization of the stapes. The following tabulated statement of his results will speak for itself.

Cases in which the membrana tympani was intact—

Operated on under cocaine anæsthesia	21
Much improved	13
Moderately improved.....	7
Slightly improved	1
Operated on under ether	13
Greatly improved	2
Much improved	5
Slightly improved	5
Unimproved.....	1

Cases in which there remained a slight or extensive destruction of the membrane, the perforation persisting—

Operated on by freeing and mobilizing the stapes ..	11
Greatly improved	1
Decidedly improved	10

Cases in which there was a purulent otitis—

Greatly improved	5
Moderately improved.....	3
No improvement.....	2

Cases in which the membrane was intact, and the stapes was removed or the crura fractured in the attempt

Much improved	2
Improved.....	3
Slightly improved	1
Unimproved.....	2
Made much worse	2

It will be seen that the results were best in those operations carried out under cocaine anæsthesia, and where the design was to secure a permanent opening into the tympanum. Whether or not we are encouraged by these results to carry out intra-tympanic surgery more thoroughly than has been done in this country, we must acknowledge the justifiability of exploratory tympanotomy, the technique of which is excellently described.

The book contains the best of all that is old, and in addition much that is new and well worthy of study by British surgeons, reflecting as it does the views of one of the ablest and most reliable of the American progressive otologists.

Dundas Grant.

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**The OPERATIVE and DIETETIC TREATMENT of
SUPPURATION in the ACCESSORY CAVITIES of the NOSE.**

By Dr. ZIEM (Dantsic).

(Translated by A. BROWN KELLY, M.B.)

Gentlemen, I have great pleasure in availing myself of the highly-esteemed invitation of the President and Council of the British Laryngological and Rhinological Association to contribute a review of the treatment of suppuration in the accessory cavities of the nose. My sole regret is that I am unable to be present at your meeting and to read this paper myself. I should mention in the first place, however, that I am not in a position to fully meet the wishes of the Association, for my experience is in a large measure confined to suppuration in the maxillary sinus—which cavity I have opened over five hundred times. My practical knowledge of the other accessory cavities is much more limited. They, however, are seldom affected in comparison with the antrum.

Before entering into the consideration of suppuration in the antrum, we shall briefly discuss the question as to whether operative treatment is necessary in the majority of cases, and whether syringing through the natural ostium is not in itself sufficient. Cures were effected in this manner, as you are aware, even last century by Allouel and Jourdain, and recently by Störk, Hartmann, Killian, Garel, and others. The method has never come into common use, however, on account of its uncertainty, pain and want of thoroughness. As to the percentage of cases in which catheterization of the natural opening is possible, Killian states that in forty instances he succeeded in more than half; Garel met with similar success (twenty-eight in forty-four)—in two or three of these cases,

however, it was necessary to make a preliminary application of the galvano-cautery to the swollen middle turbinate, a procedure which may exercise a harmful influence on antral suppuration; Störk, on the other hand, according to a communication of Lermoyez, failed in a large majority of his cases, and Hyrtl, who tried the method on himself, only caused bleeding. Further, as regards the pain, I may refer to a patient who came under my care after having been treated in this way for not less than fourteen months elsewhere; great pain was caused every time that the washing was carried out through the ostium maxillare, but when made from the alveolar process no discomfort was experienced.

In Garel's cases cocaine appears to have been regularly employed, both as an anæsthetic and in order to obtain a dilatation of the ostium by expelling the blood from the surrounding mucous membrane. An agent of this kind is certainly not to be recommended as part of treatment which often requires to be pursued for weeks. Not only may it give rise to general toxic symptoms, but it may lead to unfortunate consequences locally, owing to the blood being suddenly driven from the nose and sinus. Thus, Luc and Martin have observed anosmia, Markwort has proved the occurrence of acute glaucoma, and other similar accidents have been reported. These are the more to be feared when we require to treat inflammatory and painful affections of the eyes associated with the antral suppuration, and when all increase in the hyperæmia of the eye is to be carefully avoided. By exciting such mishaps, in many instances the injury done to our patients will be undoubtedly greater than the benefit gained by shunning a slight operation, which, in by far the greater number of cases, is exceedingly simple, and consists in making a counter-opening.

Then, as to the uncertain success of such washings, it is known how the size of the ostium maxillare varies in individual cases, so that, when a small opening has been established in the alveolar process, the washing of the cavity can be easily carried out in one case, and only with difficulty in another. This holds good, not only for Garel's india-rubber syringe, but even when a strong force-pump is employed. The syringing may also be easy or difficult in the same case on different days, the variations depending upon the amount of swelling in the vicinity of the ostium maxillare. The washing must evidently give rise to greater difficulty, however, when there is no counter-opening, and when a naturally small ostium is still further diminished by the introduction of a canula. In many such cases we are certainly able to inject some fluid into the sinus, but not to drive it through. If we apply force, the pressure of the contained fluid will cause the patient violent pain. On the other hand, if we use the double canula recommended by some authors in order to ensure the escape of the fluid—leaving out of account the dilatation of the maxillary canal by cocaine, which has been already condemned—the patient will suffer further discomfort owing to the large calibre of the instrument. This easily explains how in several cases observed by Hajek large collections of pus were removed by washing from the alveolar process after syringing through the natural opening had caused only a slight cloudiness of the liquid used.

Garel also considers it wrong to suppose that the sinus cannot be thoroughly washed from the ostium maxillare; but, in order to increase the effect, he holds that it is essential to force in water and air at each sitting. This latter proceeding, when strong pressure was employed, produced an unfavourable result, often causing my patients pain. At that time, however, I had only imperfect apparatus, being chiefly dependent upon Mayer's pump, and very frequently I have unintentionally driven water and air at the same time into the antrum. Washing through the natural ostium also wastes a great deal of time, as a rule; in any case it takes much longer than when carried out from the alveolar process, after a counter-opening has been made. Nevertheless, in some instances, especially when the ostium maxillare is naturally wide, syringing may be attempted through it, as Ferreri has recently advocated in cases, the description of which suggests ozæna. That but little is to be attained by this method, under the most favourable circumstances, is indicated by the fact that, in spite of the high percentage of cases in which Killian found catheterization possible, he treated only nine of his forty patients from the ostium maxillare. Washing through this opening is reliable only when it gives a positive result, *i.e.*, when, in a moderate empyema, the pus is carried away. It does not, however, allow of our excluding the presence of a slight suppuration, as is evident from a case which will be described immediately. Besides, after washing through the ostium maxillare, a true cure can never be proved by means of transillumination, which is here nothing more than a pastime. From the physical and mechanical standpoints, as well as from the surgical, the establishment of a counter-opening is the only right procedure in the vast majority of cases. To shrink from this in the age of antiseptics is an anachronism.

I. The opening can be made either from the nose or from the mouth. That from the nose, which we shall describe first, may be established in the middle or inferior meatus. At the same time, we may or may not make an opening from the alveolar process or canine fossa. Fine as well as large instruments may be employed.

It has been remarked that an opening from the nose is more in accordance with nature, because the antral mucous membrane represents an offshoot, not of the alimentary canal, but of the respiratory tract. This we may, without hesitation, put aside until the surgeon refrains from performing Cæsarean section, because such a path was not destined by nature for the escape of the uterine contents. What is of more importance, however, is the fact, that, in entering the sinus from the nose, a thinner bony wall has usually to be penetrated than when the opening is made from the alveolar process. The bony plate which separates the nasal fossa from the antrum is usually absent in those advanced in years, as Hyrtl has already pointed out, so that the partition between the two cavities is frequently formed entirely of mucous membrane.

In former times, when the instrumentarium was still defective, it was thus not injudicious to make the opening from the nose in a number of cases. On the other hand, however, we not uncommonly meet with cases, especially of young persons, in whom, owing to the thickness of the naso-

antral partition, opening from the inferior meatus by means of Krause's trocar, or a similar instrument, either failed, as in four of Michelson's twenty-six cases which were operated upon in this way; in four of Lichtwitz's thirty-nine cases; in three of Garel's seventeen cases, and in a case described by Kelly, or succeeded only after the use of great force. I have received my information on the latter point from medical men who have witnessed operations of this kind in different clinics. Figs. 1, 2, and 3, from Zuckerkandl and B. Fraenkel, show how thick the naso-antral wall may be. In such cases it would be simply torturing the patient to

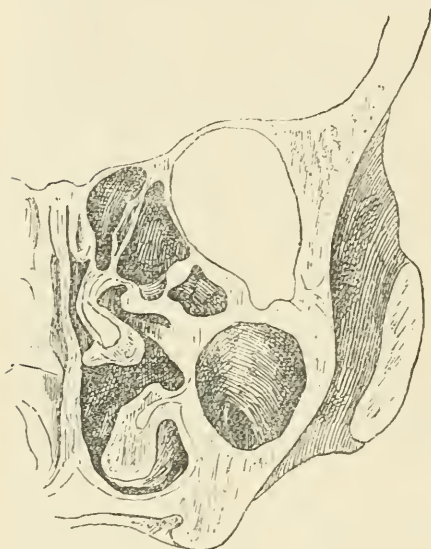


FIG. 1.

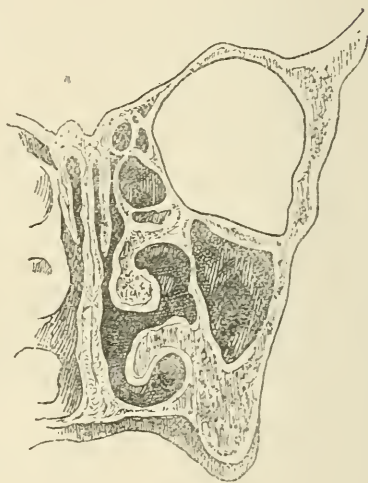


FIG. 2.

attempt to reach the antrum with the trocar of Mikulicz or Krause, or with a similar instrument, or with the galvano-cautery, as recommended by L. Bayer and Moure; this last method would have the further disadvantage of causing extensive necrosis.

I might also mention a case which came under my notice, and in which attempts had been made to enter the sinus from the nose by means of an aspirating needle. The needle broke in the naso-antral partition, and, according to the patient's statement, was removed only after considerable trouble. An opening from the alveolar process, on the other hand, was subsequently established with great ease. This method of passing an aspiration needle into the antrum through its nasal wall, although recommended by Bresgen, M. Schmidt, Lermoyez, Bryan and others, yields but unreliable diagnostic results when the suppuration is slight, and in the so-called serous inflammation of the cavity observed by E. Schwartz, Noltenius, and others, is probably of only occasional value. At the outset, however, being ignorant of the thickness of the wall between the nose and antrum, it is manifestly our duty always to employ

perfect instruments, that is, such as are really capable of making the perforation easily, and with the least possible injury. The instruments introduced by Collin and Ollier fulfil these requirements, and, less satisfactorily, that of Tornwaldt; still better, however, is the dental engine or motor. Further, the nasal cavities may be so narrow, in consequence of deviation of the septum, or of their imperfect development, that the antrum can be reached through the nose only with difficulty, if at all.

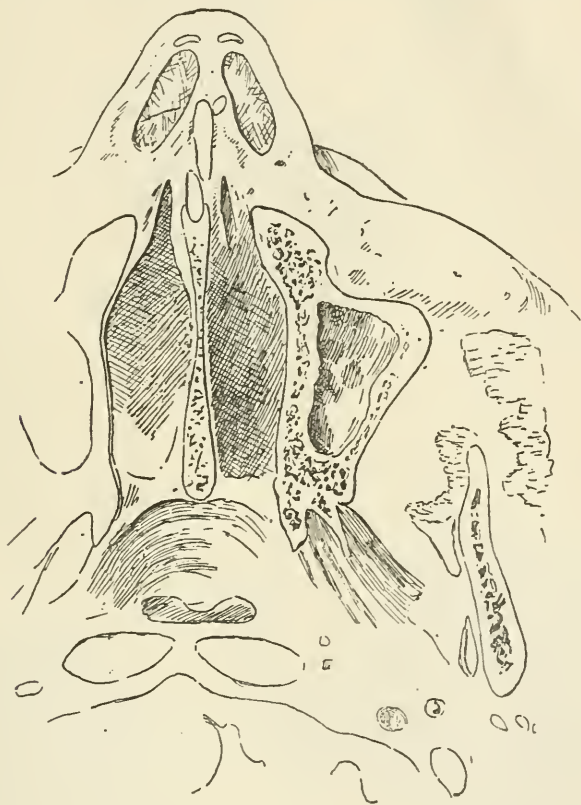


FIG. 3.

An antral suppuration may be present under these conditions, and must naturally be treated.

It may also be mentioned in the latter connection that both from the anatomical researches of Th. Harke, of Hamburg, and from observations made in my own practice, suppuration in the antrum is not uncommon in children. In many cases the antrum extends upwards or backwards so far (compare Figs. 4, 5 and 6, from Zuckerkandl) that, in attempting to open it from the anterior part of the inferior meatus, the instrument passes in front of the sinus into the canine fossa and the soft

tissues covering it. An accident of this kind has, to my knowledge, occurred on two occasions in this town. If, however, in order to reach the sinus with greater certainty, we advance deeper into the nasal cavity, the

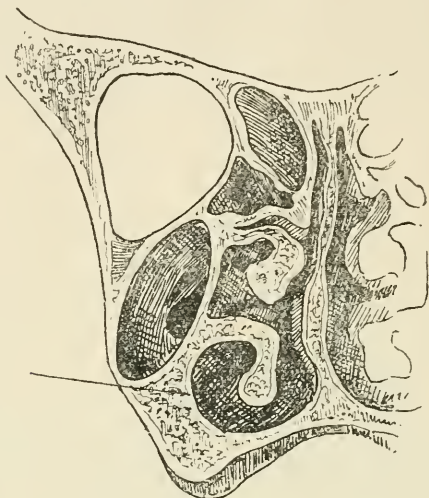


FIG.

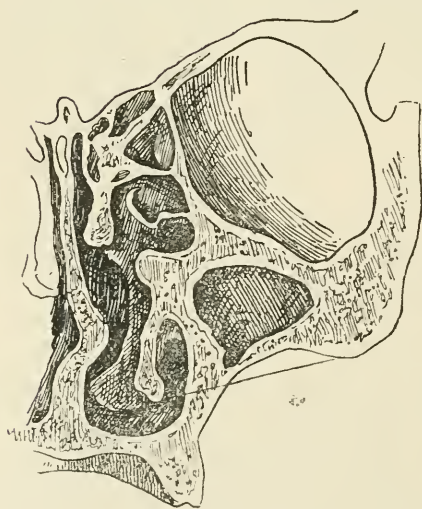


FIG. 5.

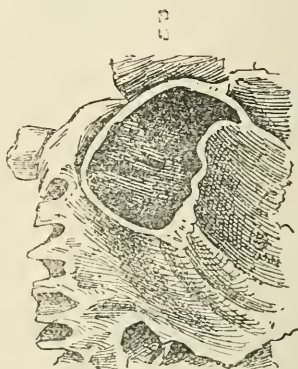


FIG. 6.

danger of severe hæmorrhage is thereby increased ; thus, in one of the four cases described by Mickulicz, it was necessary to plug the corresponding side of the nose for many hours, and in several cases in the practice of others here, a very exhausting bleeding has taken place either during or

after the operation. In addition to this, with the limited space admitting of the use of straight instruments only, and not of those in which the crowns are set at a right angle to the long axis of the trephine, and when the wall is of considerable thickness, we can enter the antrum only through a passage running obliquely backwards, so that the introduction of canulæ will be difficult for the surgeon and the patient, unless a very wide opening has been made.

To illustrate this point, I may refer to a patient that came under my observation, whose antrum had been opened from the nose by a well-known rhinologist. On the day following the operation the surgeon failed to find the artificial opening, and for more than a year afterwards the patient syringed the nasal cavity instead of the antrum, by means of a canula which had been prescribed. Subsequently, when I made an opening from the alveolar process, a large quantity of foul-smelling pus escaped. The difficulties experienced in self-treatment from the nose have already been dwelt upon by various authors, and it is quite exceptional for a patient to be so skilful that he can wash out his antrum unaided, even through the ostium maxillare, as in one of Garel's cases. Further, the nasal mucous membrane is exceedingly vascular, and has a great tendency to heal, thus leading to a contraction of the artificial orifice. In a number of cases that have come under my notice the patients soon gave up the treatment because of the severe pain produced during the passage of the canula through the opening, which had become narrow.

We have still to mention the incompleteness of the washing, as a last but very important objection to the operation from the nose. As early as 1886 I pointed out that in no other way is the irrigation carried out so effectively and comfortably as through the opening made according to Cooper's method; that here, with the entrance and exit openings situated almost directly opposite one another, the mucous membrane lying between is more thoroughly washed than if they were close together, as is the case when the operation is performed in the canine fossa. Since then, this observation has been proved to hold good also when the passage is bored from the nose, for, in washing from the alveolar process I have obtained flakes of pus, while a colleague, with instruments as aseptic as my own, completely missed the pus when he opened the same patient's antrum from the inferior meatus some weeks previously.

After the publication of this case,¹ which showed the unreliability of a diagnosis based on negative results obtained by exploratory washing from the inferior or middle meatus, Dr. Lichtwitz, of Bordeaux, with praiseworthy candour, wrote informing me that he now understood how several of his patients affirmed that there was an improvement in their condition after the exploratory washing from the inferior meatus, although the proceeding had not demonstrated the pus which was evidently present. There is certainly no need of clinical proofs on this point, for, to take common-place examples, one would not attempt to wash the dregs out of a cask standing on its end, by syringing through an opening made in its side, but would either lay the cask on its side, or, still better

¹ "Monatsschr. für Ohrenheilk.," 1893, No. 12.

bore a hole in its lower end. If, therefore, we wish to wash out the cavity thoroughly from the nose, either through the ostium in the middle meatus, or through an artificial opening in the inferior meatus, it will be necessary in most cases, in order to obtain a permanent cure, to make a counter-opening in the alveolar process so as to provide free egress for the secretion. A counter-opening in the zygomatic or canine fossa, as recommended by some operators, does not secure such effectual cleansing. For this reason, and in opposition to the opinion I formerly held, I would wash from the alveolar process even in the case of an antral empyema bursting into the inferior meatus.

Surgeons, having experienced the inadequacy of washing from the nose, extended their unfavourable verdict to washing in general. It was chiefly this that led Krause and Bresgen to apply the so-called dry treatment by insufflations of iodoform or aniline dyes. The satisfactory results reported by them have not, however, been confirmed by other authors in severe cases. We trust that Bresgen has now abandoned the systematic inflation of the antrum by means of an india-rubber bellows, the nozzle of which was introduced into the nose, and which was intended to take the place of washing.

It is evident from all that has been stated above that absolutely no progress has been made in the opening of the sinus from the nose either for exploratory or therapeutic purposes, although the procedure has been strongly and urgently recommended in recent years by certain surgeons and rhinologists. Expert operators, such as Ed. Albert, in Vienna, have condemned it, and Mikulicz himself, one of its chief supporters, afterwards occasionally adopted one of the other methods which had long been practised in surgery. There was no real need of such an innovation, and, in the case of some specialists, it was perhaps not so much a clear recognition and perfect conviction of the superiority of the procedure, as a hankering after what was new and unusual that gained this method, hampered with its many defects, what was luckily only a transient notoriety. The words of the poet—

“The world is still deceived with ornament,”

are, unfortunately, sometimes applicable also in the department of medicine.

II. We shall describe in detail only two of the methods of opening the antrum from the mouth, viz., that of Meibomius and Cooper, which consists in drilling through the alveolar process, and that of Desault, whereby the opening is made in the canine fossa. Lamorier's plan of entering from the zygomatic fossa, which has recently been employed in several cases by Killian, will only be referred to in passing, for it is no better suited for the washing of the cavity than a passage from the nose, and in the dry treatment it can hardly have any advantage over Desault's method.

Three objections have been raised to Cooper's method.

- (1) That it often necessitates the sacrifice of a sound tooth.
- (2) That it provides too small space.
- (3) That through the communication established between the mouth

and nasal cavity renewed infection of the antral mucous membrane may take place, and may even prevent the suppuration being cured.

1. The first objection does not hold good if we employ fine drills worked by a dental engine. When an alveolus corresponding to the first or second molar, or even to the second bicuspid, is available, or when it can be made so by the extraction of a stump from one of these situations, the drill is introduced into it. In the absence of such a space, and when the set of teeth is complete, the opening is made on the inner side of the teeth, either between the first and second molars, or between the first molar and second bicuspid. In this way, I have entered the antrum for the purpose of exploratory irrigation in a large number of persons with the greatest ease and rapidity, performing the operation in seven, five, or even fewer seconds. The whole thing is carried out so expeditiously that colleagues who have happened to be present have seldom failed to express their surprise, especially when they had seen the cavity opened from the nose elsewhere.

This little operation can be performed with the patient either lying on his back, or in the sitting posture. The former is to be preferred when the person is restless, as he can be more easily held; if he is seated, an assistant should steady his head. Hitherto, I have never used chloroform or cocaine. A moderately broad tongue depressor is placed between the patient's teeth, the spiral of the dental engine is directed by the operator's two hands in order to ensure better fixation, and the working of the engine is left to a second assistant, so that the attention of the operator may not be divided.

It is questionable whether the electric motor recently advocated can claim any other advantage over the dental engine, save that it dispenses with a second assistant. Such apparatus—possibly owing to imperfect construction or want of attention—frequently proves ineffectual in practice, as I have been told by dentists; in any case, it considerably raises the price of the instrumentarium. If one wishes to possess something even more powerful and imposing than the foot-machine or the motor, let him have a hydraulic apparatus constructed, such as is used in large works for boring metal plates. As end pieces on the spiral, I have used for several years only spear-shaped drills, varying in breadth and length. With those commonly in use we can bore to a depth of from 30 to 35 millimètres; in rare cases longer ones must be employed (*see below*). Formerly, after making a longitudinal incision, I separated the muco-periosteal covering of the alveolus or inter-dental space in order to place the drill in position. For several years, however, I have bored directly through the gum, after cleansing it thoroughly. If the washing—which is carried out by means of a force-pump (*see below*)—does not reveal the presence of pus in the sinus, the only inconvenience the patient suffers is his being confined to his room for half a day, which is necessary in order to prevent the possible swelling of the lining membrane of the cavity from cold.

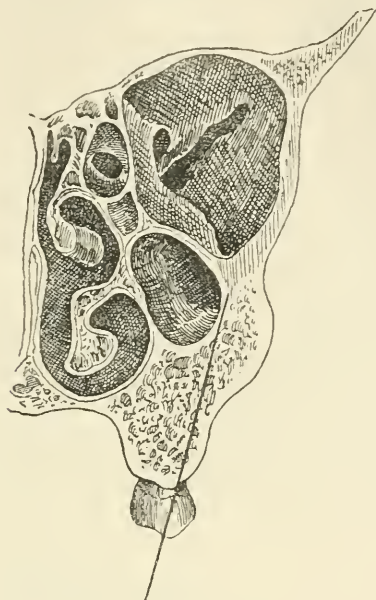
In statistics which I published seven years ago, ten to twelve per cent. of the exploratory openings I made gave a negative result; the percentage has decreased since, in a great measure, because I now rarely drill when the

set of teeth is complete (*see below*). If, on the other hand, pus is found, the passage may be enlarged. When the opening is situated between the teeth its diameter may measure 2 millimètres; when in an alveolus, this may be increased to 4 or 5 millimètres; or, if it is thought necessary, it may be still further enlarged in a few minutes by means of broader drills. The assertion made by some authors that a hole 4 millimètres in diameter cannot be drilled with a dental engine agrees neither with practical experience, which is easily obtained on this point, nor with my communications on the subject which were published as early as 1888. By means of large drills, or even of suitable trephines, such as those introduced by Strazza, Scheinmann and others, the opening can be widened even to a centimètre or more, whereby the interalveolar septa are removed. One would not have thought, however, that it was necessary to regard this slight modification as a special procedure, and that it should be designated by the name of a young author. When there is marked swelling of the nasal mucous membrane, and especially when inflammatory conditions are also present within the eye, as iritis, glaucoma, and the like, the opening, as far as space permits, is made at least 3 millimètres wide from the first, so that the fluid injected finds a free exit under all circumstances, if not through the ostium maxillare, then by the artificial opening. This precaution is necessary, because filling the sinus with fluid would, in the presence of such conditions, give rise to increased pain in the eye.

In similar cases, when there was no exit into the nose, Michelson made one in addition to the passage drilled through the alveolar process. The enlargement of the passage in the latter, however, is greatly to be preferred to such a procedure, and Michelson himself would have arrived at this conclusion had he made use of the dental engine with drills of different sizes instead of the trocar. It is quite inexcusable at the present day to employ and recommend a trocar, and still more so, when for the purpose of penetrating a thick bony layer in the alveolar process; it is to be hoped that those operating in this style may never experience the unsuitability of the method on themselves. The sterilization of the instruments is not the only matter, it is also plainly our duty to avoid as far as possible the injury and disturbance of the tissues associated with every operation. Even when the alveolar process presents a sharp edge, a passage may be bored through it into the sinus, as in one of my cases, which I referred to seven years ago, and in which I at first failed, but afterwards succeeded by means of very fine drills. The view of Firwe of Christiania, that in such cases it is necessary to enter from the nose, was thus disproved.

Since I commenced to use the dental engine in 1887, I have been unable to enter the sinus when the teeth were sound only in one case, and then I had a healthy tooth, the second molar, extracted. The antrum proved to be so exceedingly small, that it would have been hardly possible to hit upon it from the anterior half of the inferior meatus or from the canine fossa. On the other hand, I have failed, as has also Lichtwitz, to enter the sinus from an alveolus in four or five cases; this arose either from directing the drill too much to the side, corresponding

to the relations shown in Fig. 7, which has been taken from Zuckerkandl, or because I did not pass deeply enough into the jaw. Sometimes it is



[FIG. 7]



FIG. 8.

necessary to penetrate a considerable distance in order to reach the sinus thus, in three cases, I had to apply a drill which could penetrate forty-five millimètres, without, of course, making use of its whole length.

The last of these cases occurred some months ago, and was that of a woman thirty years of age, who suffered from blennorrhœa of the lachrymal sac, associated, as it invariably is, with nasal suppuration. Toothache in the upper jaw at the onset having necessitated the extraction of the first molar, darkness of the affected half of the face, as well as absence of all subjective sensation of light during transillumination, were the conditions which led us with a fair degree of certainty to expect suppuration in the antrum. This might have given rise to a secondary affection of the mucous membrane of the lachrymal canal (Fig. 8) as has occurred in many other cases of the same kind, through the thin septum (septum tubo-maxillare) separating the antrum from the naso-lachrymal canal.

After the antrum had been successfully opened from the alveolus of the first molar with the longest drill, no pus was found on washing it out. Contrary to the above supposition the pus collected in the nose itself, or in another accessory cavity, had been driven by blowing the nose into the lachrymal canal, and thus had caused the latter to become affected. We were unable to investigate further the place of origin of the disease owing to the patient setting out afterwards for Chicago. Here, also, it would have been no easy matter to open into the antrum, which was so slightly developed, either from the inferior meatus or from the canine fossa. When penetrating so deeply into the maxilla, it is necessary to be very careful not to pass across the antrum and pierce the orbit or even the eyeball

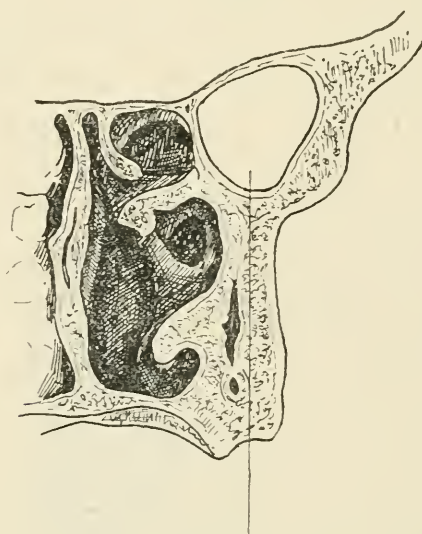


FIG. 9.

(Fig. 9) ; this may always be avoided by drilling cautiously and slowly, frequently comparing the depth reached with the distance of the alveolar process from the floor of the orbit, which lies somewhat deeper than its lower margin, or by changing the direction of the drill. In one of my

cases the drill struck against the roof of the antrum with a slight crack, and gave rise to a hæmorrhage, either from the infra-orbital artery or one of its branches, which was followed by discoloration of the skin of the inner half of the lower lid. Prof. Walb, of Bonn, had a similar unpleasant accident, which necessitated the ligature of the infra-orbital artery.

In another case which came under my observation, immediately after opening the antrum from the alveolar process, although I was unaware that I had pressed against the roof of the cavity, a fairly large stream of blood gushed from the mouth and nose; I had here to do with a bleeder, whose father had died in early life of heart disease.

In order to complete the enumeration of the mishaps that have befallen me, I may mention in the first place, that several times while entering an alveolus, owing to the drill being pointed wrongly, I have injured a neighbouring tooth, which, though slightly diseased, was still of service, but had then to be extracted.¹ Then, in some of my first operations, I have penetrated the lateral wall of the antrum without immediately noticing the mistake, and on irrigating have produced an infiltration of the cheek with water, which, however, was soon removed. Further, there is the case of a boy eight years old, whose antrum was drilled into and washed out on the first occasion successfully, but when the irrigation was repeated on the next day, the fluid passed into the lower eyelid instead of escaping from the nose; this may have arisen in consequence of a dehiscence in the anterior wall of the cavity, a condition that Zuckerkandl has seen several times; the accident never recurred, however, and the patient was cured of his fœtid blennorrhœa. Again, in one instance, when I was about to operate on a patient whom a young colleague had committed to my care, the posterior wall of the sinus was penetrated in consequence of the drill, which was placed in the alveolus of the last molar, being wrongly and insufficiently controlled by me. Infiltration of the retro-maxillary fossa and secondary abscess formation in the cheek followed, and unfortunately rendered the patient incapable of attending to his work for several weeks. Finally, in a patient on whom I operated seven or eight years ago, but who was afterwards treated elsewhere, a partial necrosis of the alveolar process occurred. This was possibly caused by the too extensive detachment of the muco-periosteal covering, a procedure which at that time I still practised. To completely abandon the operation from the alveolar process, as has been done in some quarters, on account of the last-mentioned accident, which could easily be avoided, and of which no other case is reported, is to give the matter an unmerited importance. Almost all the mishaps mentioned, in contradistinction to the unfavourable anatomical relations met with in operating from the nose, can be escaped in future by entering at a suitable spot. The socket of the first or second molar is the best site, that of the second bicuspid is less good, while that of the third molar is to be used only under special circumstances, and then with the greatest caution, estimating exactly the

¹ I do not think that it is possible to drill into a perfectly sound tooth with the dental engine; besides great resistance is felt, and the direction of the drill can be changed.

direction of the drill and not advancing too hurriedly. When the operation from the alveolar process is performed with the aid of the dental engine it is a very simple matter, as L. Bayer, Garel, and others have affirmed. It does not matter now whether one requires perhaps a second or two longer than in entering from the inferior meatus, and it is quite exceptional at the present day when opening the antrum from the alveolar process, either for exploratory or therapeutic purposes, to require to extract a healthy tooth.

(To be continued.)

ANNOTATION.

STAPHYLOCOCCI AND OTORRHŒA.

IN an article on the relation of staphylococci to otorrhœa ("Annales des Maladies de l'Oreille et du Larynx," January, 1895) Drs. Lermoyez and Helme give a review of the literature¹ of the bacteriology of the various forms of purulent otitis, and they arrive at some conclusions which we think are well worthy of attention. In the acute stage of otitis media the microbes most commonly found are the streptococcus and the pneumococcus, and only very rarely the staphylococcus, which is then almost invariably associated with one of the others. At a later stage in the course of the disease the staphylococcus becomes more frequent, and ultimately takes the place of those microbes which gave rise to the primary infection. This secondary infection is generally produced by the staphylococcus albus rather than the aureus. The question then arises as to the mode of ingress of the staphylococci, and as to the means by which this may be best prevented. There is no doubt a possibility of their reaching the tympanum by way of the Eustachian tube, but there is greater probability that in general they make their entrance through the perforated tympanum from the external meatus. Their presence has been detected in ordinary cerumen, and no doubt they may exist in the passage under normal circumstances; but, apart from this, there is very great danger of their being conveyed there by means of dressings which have not been properly sterilized, and in particular by cotton-wool, so much employed in the therapeutics of the ear. Bacteriological examinations have proved the almost constant presence of the staphylococcus albus in the pledgets of wool commonly used for wiping out the ear, and more particularly in those which have been twisted on to the wool-holder by means of the thumb and finger at the moment.

The most certain means of preventing chronicity in the case of an

¹ Mayer, "Müller's Archiv," page 401; Zaufal, "Prager Med. Woch.," July, 1887; Netter "Annales des Maladies de l'Oreille," October, 1888; Moos, "Deutsche Med. Woch.," Vol. XXI., fasc. 1 and 2, page 44, 1891, Nos. 11 and 12; Kanthack, "Zeitschr. für Ohrenheilk.," Maggiora and Gradenigo, "Osservazioni batteriologiche sulle otiti medie purulente"—"Giornale della R. Accademia di Med. di Torino," July and August, Nos. 7 and 8, page 490; Martha, "Des Microbes de l'Oreille." Paris: G. Steinheil. 1893.

otorrhœa consists in taking all antiseptic and aseptic precautions in the treatment of the disease in its acute stage. This may be carried out in three directions—asepsis of the buccal and nasal cavities, asepsis of the auditory meatus, and asepsis of the instruments and dressings. Of all these, the one to which the writers attach the greatest importance is the sterilization of the cotton-wool, which may be carried out by preparing the pledgets beforehand, sterilizing them in the autoclave and preserving them in stoppered bottles, from which they may be taken by means of forceps sterilized in a gas-flame at the moment desired. They have, however, devised a simple and ingenious method which permits of sterilizing the wool at the time of dressing. It consists of dipping the pledget of absorbent wool in a saturated solution of boric acid in alcohol and then setting it on fire. The wool is thus sterilized in a few seconds, the boric acid preventing it from becoming carbonized, while the absorbent properties are preserved.

The views above expressed have been vigorously criticized by Drs. Gradenigo and Peschi ("Annales des Mal. de l'Oreille," etc., July, 1895), who point out that in a certain number, albeit a minority of cases of suppurative otitis, the staphylococcus is present in combination or alone even at the commencement of the acute stage. They further insist that as this may be detected prior to the occurrence of perforation, the possibility of the ingress of the staphylococci from the naso-pharynx by way of the Eustachian tube is therefore proved beyond question, and in their opinion, it is not nearly such an exceptional course of events as Lermoyez and Helme ventured to believe. As regards the inoculation of wool pledgets by means of the surgeon's fingers, they appear to suggest that in the French clinic the surgical hygiene of the hands is somewhat less scrupulously studied than it ought to be.

They make a strong claim for what they call the rational method of treatment of acute otitis, namely, by the avoidance of syringing, and the adoption of a form of occlusive drainage, consisting of the plugging of the meatus with strips of iodoform gauze, at the same time that (in accordance with the views above expressed) they carry out a scrupulously careful treatment of the naso-pharynx.

They further insist, that in concentrating attention so exclusively on the staphylococcus, the other potent factors in the infective process are apt to be neglected, such as the constitutional condition of the patient, the insufficient size of the perforation, and the concomitant affections of the mastoid cavities and naso-pharynx.

Dr. Lermoyez and Helme, in the same number of the "Annales," reply that the trenchant criticisms directed against their views are not justified, because the qualification which they admitted was not taken into account by the critics, with whom indeed they held that they were quite in accord. They are disposed to resent the slur cast upon their antiseptic precautions, and venture to question whether the eminent Turin professor can provide better means than they do for carrying them out. The writer can only re-echo, from personal observation, the expressions of admiration as to the ideal character of the aseptic precautions practised in Dr. Lermoyez's clinic.

Meanwhile, the points here touched on derive additional emphasis from these discussions, and in view of the vital issues depending on them, we offer no apologies for drawing attention to them, even though they be familiar, in whole or in part, to all those practising otology.

ABSTRACTS.

DIPHTHERIA, &C.

Aaser (Christiania).—*The Existence of Loeffler's Diphtheria Bacilli in Healthy Persons.* "Deutsche Med. Woch.," 1895, No. 22.

A DIPHTHERIA epidemic occurred among the soldiers in a barrack. The author examined the healthy men, and found virulent diphtheria bacilli in seventeen cases—*i.e.*, nineteen per cent.—in the mouths of eighty-nine healthy subjects. In a scarlatina ward of his hospital, infected by one case of diphtheria, he found bacilli in twenty per cent. of the children with scarlet fever without diphtheritic affection. After removal of the infected soldiers from the barrack and the children from the ward the epidemic ceased.

Michael.

Bernheim (Graz).—*On Mixed Infections in Diphtheria. Clinical and Experimental Researches.* "Zeitsch. für Hygiene," Band 18.

THE experiments of the author gave the result that, if cultures of streptococci are injected in rabbits at the same time as those of diphtheria bacilli, the infection is much stronger, and death follows in a much shorter time than if diphtheria bacilli alone are injected.

Michael.

Eptein.—*Pseudo-Diphtheria of Septicæmic Origin in New-Born Children and Babies.* "Jahrb. für Kinderheilk.," Band 39, Heft 7.

THE author has sometimes observed membranous affections in the mouths of new-born infants and babies similar to soor or diphtheria. He describes one case in which the bacteriological examination showed streptococci. In this case the blood was examined before the pharyngeal affection, and streptococci were found also in the blood. In this case it is certain that the septicæmia was the primary affection.

Michael.

Carstens (Leipzig).—*Incubation in Diphtheria.* "Deutsche Med. Woch.," 1895, No. 35.

A CHILD in a family in which were some cases of diphtheria was examined every day by the author. He found no bacilli. Later on diphtheria occurred, and the same day as it arose bacilli were found. The author concludes that the disease has only a short incubation.

Michael.

Deucher (Berne).—*The Clinical Diagnosis of Diphtheria.* "Correspondenzbl. für Schweizer Aerzte," 1895, No. 16.

THE author concludes :—(1) The clinical diphtheria of the pharynx with typical pseudo-membranes is, if scarlatinous diphtheria is excluded, in most cases similar

to Loeffler's diphtheria. (2) The punctiform diphtheria also is in most cases combined with Loeffler's bacilli, and also differs clinically from angina lacunaris. (3) The typical angina lacunaris differs from punctiform diphtheria. The secretion contains no Loeffler's bacilli. (4) The pseudo-diphtheria caused by streptococci is not only bacteriologically, but also clinically, different from Loeffler's diphtheria, and can easily be differentiated from it after exclusion of scarlatinous diphtheria. (5) In common catarrhal angina, and also in the normal mouth, diphtheria bacilli are sometimes found. (6) True pseudo-membranes in the air-passages and larynx nearly always show the presence of Loeffler's bacilli. (7) In cases of true laryngeal croup Loeffler's bacilli are often found in the tonsils. (8) If neither in the larynx nor in the pharynx can pseudo-membranes be found, the pseudo-croup can be differentiated by anamnesis and the symptoms of membranous croup. (9) In pseudo-croup, clinically diagnosed, in most cases no Loeffler's bacilli are found. (10) Diphtheria and membranous croup are not so frequently diagnosed as they should be. (11) The complication of diphtheria with streptococci does not give such bad results as is often believed. (12) True diphtheria can never be excluded from negative results of bacteriological examination. (13) In two-thirds of all cases in which Loeffler's bacilli are present they can be found in the dry preparation.

Michael.

Bernhard (Remickendorf).—*Prognosis and Diagnosis of Diphtheria*. "Archiv für Kinderheilk.," Band 19, Heft 1 and 2.

THE author concludes: The prognosis depends upon the relation between predisposition and the virulence of the bacilli. The nature of the urine is in this relation of great prognostic value. Albuminuria is an uncertain symptom, but the presence of morphological elements in the urine gives a bad prognosis—the more so the earlier it is observed. The diphtheria nephritis is a toxic symptom, and when it is present large doses of Heilserum must be given.

Michael.

Fitzpatrick, C. B.—*Notes on the Preparation of Diphtheria Antitoxin*. "New York Med. Journ.," April 27, 1895.

AN extremely valuable paper, but one which must be read in full. R. Lake.

Seitz (Munich).—*Results of Serum Treatment in Private Practice in Munich*. "Münchener Med. Woch.," 1895, No. 29.

OF 90 cases 82 have been cured.

Michael.

Nes (Hanover).—*On Fifty-two Diphtheritic Children Treated by Heilserum*. "Deutsche Med. Woch.," 1895, No. 23.

OF 52 cases, 40 (equal to 77 per cent.) have been cured. Of these, 30 were not tracheotomized, with 26 (equal to 87 per cent.) cures. Of 22 tracheotomized cases, 14 (equal to 64 per cent.) have been cured.

Michael.

Gaudard (Audeur).—*Contribution to Serum Treatment*. "Schweizer Correspbl.," 1895, No. 11.

OF fourteen cases, thirteen have been cured.

Michael.

Berliner (Remickendorf).—*Diphtheria Heilserum in Medical Practice*. "Archiv für Kinderheilk.," Band 19, Heft 1 and 2.

OF forty-two cases, two have died. The author recommends the treatment.

Michael.

Germonig (Trieste).—*Report on 362 Cases of Diphtheria treated by Behring's Heilserum in the Civil Hospital of Trieste.* "Wiener Klin. Woch.," 1895, Nos. 21 and 22.

DURING the years 1886 to 1891, out of 179 diphtheria patients, 108 (equal to 60 per cent.) died. Of 69 tracheotomized subjects, 55 (equal to 85 per cent.) died. In 1892, of 78 patients, 51 per cent. died; of 19 tracheotomized, 84 per cent. died. In 1893, of 110 patients, 52 per cent.; and of 84 tracheotomized, 75 died. In 1894 (January to August), of 149 patients, 46 per cent. died; of 54 tracheotomized and intubated, 80 per cent. died. Of 362 cases treated with serum: 240 of pharyngeal diphtheria, 23 (equal to 9.5 per cent.) died; of 120 with laryngeal diphtheria, 49 (equal to 41 per cent.) The results were the better the earlier the treatment was begun. Of 25 cases in which the treatment was begun the first day of the disease not one died. Albuminuria is sometimes observed, but not more than in other cases. Exanthema were observed in 50 cases. *Michael.*

Torday.—*Heilserum Treatment in Diphtheria.* "Pester Med. Chir. Presse," 1895, No. 26.

OF sixty-two cases treated with Heilserum nine have died. *Michael.*

Egger (Basel).—*Heilserum Treatment in Diphtheria.* "Jahresbericht der Allg. Poliklinik in Basel," 1895.

OF 157 cases treated without serum, 19, equal to 12 per cent., have died. Of 83 treated with serum, 11, equal to 13½ per cent., have died. *Michael.*

Ritter (Berlin). — *Further Communications on Diphtheria and Blood-Serum Treatment.* "Wiener Med. Woch.," 1895, Nos. 16, 17, 18, and 20.

THE diphtheria bacilli can be found in every case of spontaneous or artificial infection of diphtheria. In the case of diphtheria in man the symptoms are caused by the general effect of Loeffler's bacilli and streptococci. The fibrinous form is produced by Loeffler's bacilli; the phlegmonous and gangrenous forms by streptococci. Of fifty cases treated with combined local and serum treatment, forty-two have been cured. The author concludes that serum treatment is successful in cases caused only by the diphtheria bacilli; that in cases of infection with streptococci local antiseptic treatment gives better results than the serum treatment. Immunity inoculations have had no effect. *Michael.*

Kohts (Strasbourg).—*Experiences with Heilserum.* "Therap. Monatsch.," 1895, No. 4.

DURING the years 1889 to 1895 in the clinic of Strasbourg 841 cases have been treated; of these, 274 (equal to 32.6 per cent.) have died; of 491 tracheotomized, 218 (equal to 44½ per cent.) have died; of 350 non-tracheotomized, 56 (equal to 16 per cent.) have died. The mortality of tracheotomized subjects varied in these years between 25 per cent. and 50 per cent., and of non-tracheotomized, between 7 per cent. and 18 per cent. In 85 per cent. of all fatal cases the end was caused by bronchial croup; in 15 per cent. by other complications. Or 29 cases treated, with 13.7 per cent. deaths, without Heilserum, 18 have not required operation, and there has been no case of death; of 11 tracheotomized patients, 7 have been cured, and 4 have died. 39 cases were treated with serum; of these, 12 were not tracheotomized; one of them died. Of 27 tracheotomized patients, 8 died. The author concludes: The result of the Heilserum treatment was not so favourable as that during the year 1891. It cannot prevent complications. *Michael.*

Leichtenstern and Wendelstadt (Kota). — *Experiences with Heilserum.*
 "Münchener Med. Woch.," 1895, No. 24.

THE mortality of non-operated cases is not diminished by the Heilserum treatment, but the mortality of tracheotomized children is diminished from sixty-four per cent. to forty-three per cent. It was not so small during any period of other treatment.
Michael.

Lunin. — *Treatment of Diphtheria by Heilserum.* Verein St. Petersburg. Aerzte, Meeting, March 28, 1895.

OF twenty-six bacteriologically examined cases of diphtheria treated by Heilserum eleven have died. Of five cases tracheotomized two have died. The author recommended the treatment.

MASING agreed with the author.

SCHMITZ remarked that in his experience local treatment with toluol is without any effect.
Michael.

Kurth (Bremen). — *Results of the Application of Diphtheria Heilserum in Bremen from October 8th, 1894, to April 30th, 1895.* "Deutsche Med. Woch.," 1895, Nos. 27, 28 and 29.

OF ninety-seven cases, ten have died (equal to 10.3 per cent.). The author also has performed prophylactic vaccinations on a great many cases, and is satisfied with his results. The extensive details must be seen in the original.
Michael.

Ersenstaldt (Pappenheim). — *Serum Treatment.* "Münchener Med. Woch.," 1895, No. 29.

OF 102 cases 10 have died.

Michael.

Springorum (Magdeburg). — *Report on 206 cases of Diphtheria treated with Behring's Heilserum.* "Münchener Med. Woch.," 1895, Nos. 31 and 32.

OF 206 children treated with Heilserum 78, equal to 37.9 per cent., have died. Of 482 children treated during the same time without Heilserum 122, equal to 25.3 per cent., have died. Of tracheotomized children treated with serum, 113 cases, 52, equal to 46 per cent., have died. Of 140 treated without serum 78, equal to 55.7 per cent., have died. The author gives a great many statistics, and recommends the serum treatment, because it diminishes the mortality 10 per cent. But his facts, if impartially regarded, show that between other years, without serum treatment, there are differences of 16 per cent. (48.6—64.2), and judging from these results the serum treatment has no influence at all.

Michael.

Furth (Freiburg-i-Br.). — *On 100 cases of Diphtheria treated with Heilserum.* "Münchener Med. Woch.," 1895, No. 30.

OF 100 cases 12 have died. Of 31 tracheotomized 11, equal to 35.4 per cent., have died. In other years the mortality differed between 63 and 88 per cent. (25 per cent. variation).

Michael.

Nolen (Leiden). — *Experiences with Heilserum in a House Epidemic of Diphtheria.* "Deutsche Med. Woch.," 1895, No. 23.

THE four cases communicated refer to three children and a sister-in-law of the author.

1. A child, ten years old; affected, Jan. 21, 1895; injected, Jan. 22. Cured.

2. A child, four and a half years old; prophylactically injected, Jan. 22; affected, Jan. 23. Cured.

3. A lady, thirty years old; not injected; affected, Jan. 25; treated with Loeffler's solution. Slow convalescence, with paresis of the soft palate.

4. A child, fourteen months old; prophylactically injected, Jan. 22; attacked, Jan. 26; injected, Jan. 27. Cured.

These cases show that prophylactic injections are without any effect. *Michael.*

Marcuse (Berlin).—*The disagreeable After-Effects of Diphtheria Heilserum.*

"Deutsche Med. Woch.," 1895, No. 35.

ELEVEN days after the application of Heilserum there arose pains in the joints, exanthemata and albuminuria combined with remittent fever. *Michael.*

Zielenziger (Berlin).—*Some Cases of Exanthemata following the Serum Treatment of Diphtheria.* "Deutsche Med. Woch.," 1895, No. 35.

THE author has observed exanthemata in five cases.

Michael.

The Diphtheria Collective Investigation of the "Deutsche Med. Wochenschrift."

"Deutsche Med. Woch.," 1895, No. 32.

AN extensive report will appear later. The authors only give a short review of the statistical results. Of 5833 cases treated with serum, 559 (equal to nine per cent.) have died; of 317 tracheotomized patients, 105 (equal to 33.1 per cent.) have died; of 4479 cases treated without serum, 656 (equal to 14.7 per cent.) have died.

Michael.

Ambrosius (Hanan).—*Report on the Diphtheria Tracheotomies performed in the Hospital of Hanan, from April 1, 1891, till December 3, 1893.* "Deutsche Zeitssch. für Chir.," Bd. 40, Heft 5 and 6.

Of 99 cases, 46, equal to 46.5 per cent., have been cured.

Michael.

Buchholz.—Gesellschaft Prakt. Aerzte zu Riga, Meeting, Jan. 18, 1895.

THE author showed a case of polyneuritis diphtheritica.

Michael.

Buchholz (Riga).—*The Treatment of Diphtheria with Heilserum in the City Hospital of Riga.* "St. Petersburger Med. Woch.," 1895, No. 5.

OF seven cases six have been cured. In four cases a commencing laryngeal stenosis disappeared under the treatment. The author recommends this treatment.

Michael.

Bleich.—*Cure of Diphtheria.* "Allg. Med. Centralzeitung," 1894, No. 7.

RECOMMENDATION of inunctions with unguentum cinereum to the neck.

Michael.

Laser.—*Influence of Citric Acids on the Diphtheria Bacilli.* "Hygien. Rundschau," 1894.

RECOMMENDATION of the application of citric acid in cases of diphtheria.

Michael.

Kirstein (Berlin).—*New Electric Frontal Apparatus and Lamp for Examination of the Throat, Nose and Ear.* "Deutsche Med. Woch.," 1895, No. 29.

THE electric lamp is combined with a little reflector, which reflects the electric light collected by a lens.

Michael.

Schleicher, W. (Antwerp).—*On the Galvano-Cautery.* "Monats. für Ohren.," July, 1895.

DR. SCHLEICHER has devised a resistance rheostat attached to the handle of the galvano-caustic snare, by which the strength of the current is diminished at the

same time that the loop is drawn home, and by the same action. In this way the aid of an assistant to work the indispensable rheostat (or other modifying means) is avoided. He further recommends that the cautery wires instead of passing through complete tubes, in which the amount of friction is enormous, should lie exposed except at the points where they may go through small guiding rings. He is in favour of the use of the galvano-caustic snare for the removal of enlarged tonsils. A simplified method for the adaptation of the public electric light installation to galvano-caustic purposes is described in the same paper. (Dr. Macintyre, of Glasgow, devised a means for minimizing the increase of heat during the shortening of the cautery loop, by which the copper leads were drawn back, and not the cautery wire alone.) Dundas Grant.

Ullmann (Berlin).—*Treatment of Whooping Cough.* “Archiv für Kinderheilk.,” Band 11, Heft 1.

CHILDREN should be as much as possible in the fresh air.

Michael.

PHARYNX, ŒSOPHAGUS, LARYNX, &c.

Foster, Hal.—*The Use of Local Applications of Guiacol in Diseases of the Throat.* “Arch. of Ophthal. and Otol.,” April, 1895.

PURE guiacol is advocated as a local application in tonsillitis and tubercular ulcers of the pharynx. R. Lake.

Goschel.—Aerztlicher Verein in Nürnberg, Meeting, July 4, 1895.

THE author showed a specimen of *Cancer of the Tongue and Epiglottis*. The patient, thirty-six years old, suffered from pains in the throat and loss of weight. The examination showed the epiglottis to be cancerous, and also that the posterior part of the tongue was affected. The operation of pharyngotomy was performed, and the cancer removed, including the epiglottis and a piece of the tongue. Three weeks later sudden death occurred from hæmorrhage. The *post-mortem* examination showed that an aneurism of the aorta had perforated the œsophagus.

Bauer also relates a case of *Cancer of the Œsophagus combined with Aneurism of the Aorta.* Michael.

Dumstrey (Leipzig).—*Dermoid Cyst of the Tongue.* “Deutsche Med. Woch.,” 1895, No. 35.

FROM a patient, twenty-seven years old, the author extirpated a tumour of the size of a fist, situated under the tongue. Examination showed it to be a dermoid cyst. Michael.

Gouguenheim and Ripault (Paris).—*On Peri-Tonsillar Abscesses.* “Annal. des Mal. de l'Oreille, etc.,” Sept., 1894.

THESE authors consider the intra-tonsillar (folliculo-cryptitic) abscess to be much more common than the peri-tonsillar, of both of which they give a clear description. They refer to the rare occurrence of “repeating” peri-tonsillar abscesses, which may leave a sinus of obstinate character, calling for extensive opening. The now recognized site for puncture external to the tonsil is described, and in case of doubt as to the position of the pus, aspiration, by means of a hypodermic syringe, is recommended. They never have recourse to bromide of ethyl or to cocaine. [Our impression is that the peri-tonsillar form is the more frequent. We

always employ cocaine before incising. It permits of a more complete examination of the abscess, which occasionally points behind the tonsil instead of in the single locality mentioned.—ED.] *Dundas Grant.*

Adler (Breslau).—*The Innervation of the Velum Palatinum*. "Jahresb. der Gesellsch. für Vaterländ. Cultur," 1894.

IN a case of syringomyelia the author observed paralysis of the left side of the soft palate, and cadaveric position and atrophy of the left vocal band. *Michael.*

Sachsaler (Graz).—*Pemphigus Conjunctivæ*. "Klin. Monatsbl. für Augenheilk.," 1894, No. 8.

THE author describes a case of conjunctival pemphigus combined with eruptions, of the same character on the soft palate, uvula and pharynx. *Michael.*

Hand, A.—*A Case of Retro-Pharyngeal Abscess*. "Arch. Pediat.," July, 1895.

AN account of a case which was secondary to an attack of parotitis. *R. Lake.*

Buss (Bremen).—*Etiology of Œsophageal Strictures, and the Origin of Pneumo-thorax by Internal Trauma*. "Deutsche Med. Woch.," 1895, No. 23.

THE author refers to the result of the *post-mortem* examination of a patient who died from pneumo-thorax. The latter arose by perforation of the strictured Œsophagus with a probe. The stenosis was caused by enlarged caseous glands compressing the Œsophagus. *Michael.*

Marwedel.—*On Resection of the Œsophagus*. Naturhistorischer Medizinischer Verein zu Heidelberg, Meeting, June 25, 1895.

IN a patient, thirty-five years old, suffering from a cancer of the Œsophagus, situated in the cricoid region, Czerny performed resection of the diseased part. After-treatment consisted of the use of the Œsophageal bougie. The patient could swallow without difficulty, but during the night she had to wear the bougie to prevent the contraction of the cicatrix. *Michael.*

Brasch (Magdeburg). — *Clinical Researches on Disturbances of the Voice*. Inaugural Dissertation. Berlin. 1894.

REVIEW. *Michael.*

Paulsen (Kiel).—*On the Singing Voice of Children*. "Archiv für die gesammte Physiologie," Band 61.

THE author has examined three thousand children in the schools of Kiel as to their singing voice, and gives the results in carefully-arranged tables. The interesting details of his investigation must be seen in the original. *Michael.*

Schlotman. — *Four Cases of Peripheral Paralysis of the Accessory Nerve*. "Deutsche Zeitsch. für Nervenheilk.," 1894, No. 6.

THE author concludes that the larynx is innervated both by the vagus and by the accessory nerves. *Michael.*

Weinbrand (Strasburg).—*Two Cases of Syringomyelia combined with Paralysis of the Posticus Nerve and Atrophy of the Cucullaris*. "Deutsche Zeitsch. für Nervenheilk.," 1894, No. 6.

CONTENTS indicated in the title. *Michael.*

Priester (Gradendorf).—*Case of Protracted Atypical Spasmus Glottitis, Tetanus Laryngis.* "Wiener Med. Woch.," 1895, No. 29.

CASE of laryngismus stridulus infantum without interest.

Michael.

Landessen.—*Two cases of Acute Laryngitis.* Aerzte Verein in Reval, Meeting, Nov., 1893.

1. A PATIENT, forty years old, suddenly had an attack of suffocation; the laryngoscope showed subglottic swelling. Application of ice resulted in cure.

2. A young lady, affected for some days with influenza, suddenly got attacks of suffocation. Application of ice resulted in cure.

Michael.

Reich (Elberfeld).—*Laryngeal Syringe for Submucous Injections.* "Deutsche Med. Woch.," 1895, No. 24.

HERYNG's syringe, with covered needle.

Michael.

Brown, Dillon.—*A New Extractor for the Removal of Intubation Tubes from the Larynx.* "Med. News," July 6, 1895.

A STIFF wire loop is attached to the head of the tube transversely, and bent back to follow the curve of the head of the tube, and a groove is cut in the head beneath its centre. The extractor is a simple hook fastened by an ingenious method to the finger.

R. Lake.

Baurowicz (Krakau).—*On the so-called Chorditis Vocalis Inferior Hypertrophica.* "Wiener Klin. Woch.," 1895, No. 20.

IN numerous cases examined by the author he always found the disease to be caused by scleroma.

Michael.

Grünwald (Munich).—*Anal Fistula—Tuberculosis of the Skin—Tuberculosis of the Cricoid Cartilage—Laryngeal Sequestrum.* "Münchener Med. Woch.," 1895, No. 22.

IN a tuberculous patient, forty-five years old, suffering from dyspnoea, the author saw swelling and immobility of the left arytenoid cartilage. He performed tracheotomy, laryngotomy, and extirpation of the necrotic part of the cricoid cartilage. There resulted cure of the wound, but a stenosis of the larynx remained. Sudden death occurred, some months later, from hæmorrhage. The *post-mortem* examination showed on the left side of the larynx a hard white cicatrix, an abscess of the thyroid cartilage, and cedema of the glottis. In another case of laryngeal tuberculosis, operated upon four and a half years before, the patient is still in good health. The author recommends the operation.

Michael.

Conway, J. R.—*Creosote as a specific in Tuberculosis when used in large doses.* "New York Med. Journ.," June 1, 1895.

THE author has treated four hundred cases with this drug, and says although this list comprises laryngeal and other complications, he has so far not been disappointed in a single instance. He insists, firstly, on the quality of the drug used, and the method of administration; he gives it in capsules with cod-liver oil in the proportion of one to two. The stomach can be made to tolerate doses of close on half a drachm, which are administered immediately after meals, one patient having thus taken 30,000 minims in three years. If gastric disturbance is present it must be allayed before treatment by creosote is commenced. The initial dose is two minims *ter in die*, increased every fourth day by two minims until twelve

minim doses are arrived at. The effect is watched, and the dose increased necessary up to twenty minim doses. This applies to acute cases; chronic require a less rapid increase, and not so high a dosage. *R. Lake.*

Levy, R.—*The Treatment of Laryngeal Tuberculosis.* "New York Med. Journ.," July 20, 1895.

THE paper commences with an elaborate *résumé* of approved treatments, and concludes with a tabular list of forty-two cases treated at Colorado, and two cases in full—one a case in which the laryngeal disease preceded the pulmonary manifestations by two months; the other, a case in which the epiglottis was largely destroyed, was cured by the application of lactic acid after curettement. *R. Lake.*

Clark, J. Payson.—*Tubercular Tumours of the Larynx.* "Amer. Journ. Med. Science," May, 1895.

PREVIOUSLY reported cases are reviewed, and the following case of the author's reported. The patient was a woman, thirty-one years of age, who had suffered with hoarseness for three and a half years; examination showed a smooth, sessile, dimpled growth, springing from the left ventricular band. This was removed with a snare. The patient gained twenty-five pounds in six months, and examination of the chest was negative. The growth was made up of miliary tubercles and submucous tissue. The affection is one of middle life, and affects males more frequently than females (23 to 9); only four out of forty-two cases had no pulmonary tubercle either before or after. They are of slow growth and sometimes multiple, and the symptoms hoarseness, often dyspnoea, more rarely dysphagia, and no pain as a rule. *R. Lake.*

Ambler, C. P.—*Perichondritis of the Laryngeal Cartilages.* "New York Med. Journ.," May 4, 1895.

THE author refers to the work of Bosworth and Von Ziemsen and then deals with the difficulty in diagnosis, until there is no longer room for doubt from thrown off cartilage, or an open fistula.

When the arytenoid is involved, deglutition is interfered with, but dyspnoea is seldom present; if the crico-arytenoid joint is involved, fixation of the joint will ensue, with hoarse voice. In perichondritis of the thyroid, the external symptoms are most marked; in that of the cricoid, laryngeal stenosis is most prominent, on account of the protuberance of the abscess. The prognosis is always guarded. The treatment at first is actively antiphlogistic, both local and general, and directed later to the relief of symptoms and removal of dead tissues, etc.

Four new cases are added by the author: (1) A boy, aged fourteen, with a fistula passing through the thyroid, which was not cured. (2) A female had had laryngeal trouble for some time, and had spontaneously evacuated an abscess of the left arytenoid one year before. The right was now involved, and that abscess was incised one month later, with the greatest relief. (3) A boy, aged eight, with a fistulous tract from the sterno-clavicular articulation to the cricoid cartilage; when a laryngoscopic examination was made, the probe appeared in the larynx. (4) One of arytenoid disease in a lady, aged fifty-four, with a subglottic growth, who improved under treatment; this case was probably tubercular. *R. Lake.*

Mandowzki (Greiz).—*Some cases of Foreign Bodies in the Air Passages.* "Deutsche Med. Woch.," 1895, No. 30.

1. A CHILD, three years old, inspired a needle. Since that time the child had much cough, and pains in the throat. In the nose and mouth no foreign body could be found. Laryngoscopical examination was not possible. On the left

lung moist sounds and rhonchi were observed. During the next few months the cough and the moist sounds increased; the child became feverish, and died four months after the event. The *post-mortem* examination showed chronic inflammation of the left lung. A needle six centimètres in length was found in the hilus of the left lung. The situation of the needle was one centimètre below the bifurcation, and its head closed a bronchus.

2. A child, seven years old, inspired a piece of thuja wood. There followed cough, fever, pain in the chest, moist sounds on the left side of the lung. Eight days later there occurred expectoration of half a litre of pus and the piece of wood. Slow convalescence followed, ending in cure.

3. A child, eight years old, inspired a corn spike. He had an attack of suffocation, and during the next few days pains in the left side of the chest, and a pleuro-pneumonia. Some days later the child coughed out a spike five centimètres in length. Cure resulted.

4. A patient, thirty years old, inspired a piece of an almond. During the next few days pains in the chest and severe cough occurred. Some days later the patient coughed out the foreign body and was cured.

5. A patient, sixty-four years old, died suddenly during eating. The *post-mortem* examination showed a piece of mutton impacted in the larynx and filling its lumen.

Michael.

Bors, L.—*Intubation, with forced Dilatation of the Larynx, lasting only a few minutes, for Diphtheria and Croup (with Description of Dilator).* "New York Med. Journ.," June 29, 1895.

FALSE membrane is said by the author rarely to recur more than once, and forced dilatation is recommended, if necessary, every two and a half hours for as long as two or three days.

R. Lake.

Young, H. H.—*Tracheotomy in Emergencies.* "New York Med. Journ.," April 27, 1895.

A DESCRIPTION of a case in which in the absence of a tracheotomy tube one was made of a bent glass tube, with a wooden cross-piece. The glass tube was wrapped in thread to prevent fracture.

R. Lake.

Buchholz (Riga).—*Two cases of Fatal Bleeding following Tracheotomy performed for Diphtheria.* "Petersburger Med. Woch.," 1895, No. 24.

1. A CHILD, one year and a half old, was tracheotomized for diphtheria. Ten days later severe hæmorrhage occurred through the tracheal wound, and ended in death. The *post-mortem* examination showed a perforation of the trachea communicating with the also perforated truncus anonymus.

2. A child, one year and nine months old, was tracheotomized during diphtheria. Three days later an arterial hæmorrhage occurred through the tracheal wound. Next day there was improvement. Three days later a second hæmorrhage was followed by death. The *post-mortem* examination showed perforation of the trachea communicating with a cavity in the truncus anonymus.

Michael.

Porcher, W. P.—*Thyrotomy for Epithelioma.* "New York Med. Journ.," July 13, 1895.

THIS case was reported on the twentieth day after the operation for an epithelioma, involving the left arytenoid and false vocal cord, and which was removed by curettement. The wound had healed when the case was reported.

R. Lake.

NOSE AND NASAL-PHARYNX, &C.

Chappell, W. F.—*Semi-Fluid Preparations for Nasal Use.* "Arch. of Ophthal. and Otol.," April, 1895.

THE spray basis recommended is from half a drachm to two drachms of unguentum zinci and oleum Ricini to one ounce of oleum hydrocarbon. In acute catarrh, tannic and boric acids, menthol and camphor are recommended. In hypertrophic rhinitis, with thick, yellow discharge, boric acid, ten to fifteen grains to the ounce. With watery discharge, boric acid; with none, liquor plumbi subacetatis. In atrophic states, iodine (four grains) or a mercurial ointment is advised. These preparations are more easily borne than others, especially by children. When used to irrigate the nose, ten drops is sufficient for each nostril. *R. Lake.*

Gleitsmann, J. W.—*The Application of the Galvano-Cautery in the Nasal Passages.* "Arch. of Ophthal. and Otol.," April, 1895.

THE author advocates the use of the galvano-cautery snare in preference to the cold snare. He uses for his loop a wire of platinum and iridium; five to ten per cent. of the latter. *R. Lake.*

Wright, J.—*A Consideration of the Vascular Mechanism of the Nasal Mucous Membrane, and its relations to certain Pathological Processes.* "Amer. Journ. Med. Sciences," May, 1895.

THE mechanism of the vascular supply of the turbinates in sheep is described. The muscle-walled venous sinuses lie between the very muscular arteries and the periosteum, so that the increase in the lumen of the artery diminishes that of the vein and *vice versa*; this arrangement is also frequent in man. It is suggested that part of the function of the muscular tissue of the vein is to antagonize excessive contraction of the artery. The muscle fibres in the areolar tissue act like the tunica albuginea of the penis, in driving the blood out of the tissues when the radical veins are opened. In chronic rhinitis the veins are thickened by the growth of non-elastic fibrous tissue; in hypertrophic rhinitis there is not only a dilatation of their walls, but also a paresis. Atrophy has a primary elimination of the muscular element with encroachment on the vessels by this fibrous tissue, with subsequent absorption of part of the tissue.

The dry stage of acute coryza is due to the turgescence of the capillary network which surrounds the orifices of the glands, thus closing them. *R. Lake.*

Fink (Hamburg).—*The Importance of Coryza in Children.* "Bresgens Sammlung Zwangloser Abhandlungen," Heft 2. Halle: Marhold. 1895.

A WELL-WRITTEN review on the symptoms and consequences of coryza in children, with special regard to current literature. *Michael.*

Thomallee (Hückeswagen).—*The Treatment of Coryza and Inflammatory Diseases of the Nose by Rhinalgin.* "Aerztz. Rundschau," 1895, No. 29.

THE author has prepared nasal suppositories of cacao butter, alumnol, oleum valerianæ and menthol, and recommends this preparation for the treatment of coryza and other nasal diseases. *Michael.*

Treitel and Koppel (Berlin).—*On Rhinitis Fibrinosa.* "Archiv für Kinderheilk.," Band 19, Heft 1 and 2.

DESCRIPTION of two cases. In both Loeffler's bacilli were found. *Michael.*

Rethi (Vienna).—*Unusual Fibroma of the Nasal Mucous Membrane*. "Wiener Klin. Rundschau," 1895, No. 21.

SEE the report on the Wiener Laryngol. Gesellschaft., Meeting, Feb. 14, 1895.
Michael.

Knight, C. H.—*A Case of Fibroma of the Nasal Fossa*. "Arch. of Ophthal. and Otol.," April, 1895.

REPORT of a case of fibroma of posterior extremity of middle turbinate bone.
R. Lake.

Price, Brown.—*Recurrent Nasal Fibroma*. "Canadian Pract.," Aug., 1895.

REPORT of a case treated by electrolysis and galvano-cautery.
R. Lake.

Helferichs.—*Osteoma of the Nasal Cavity*. Greifswalder Medizinischer Verein, Meeting, Feb. 2, 1895.

THE patient, fifty-two years old, remarked twelve years ago, a little prominence on the left internal orbital wall. As the tumour produced disagreeable symptoms the patient wished that it should be removed. Operation proved it to be an osteoma arising from the ethmoid bone. The wound was closed by a plastic frontal operation. Cure resulted.
Michael.

Wright, J.—*Mycosis of the Nose and Throat*. "New York Med. Journ.," July 6, 1895.

THE author quotes four illustrative cases, the last being one of affection of the nose and naso-pharynx. He considers the galvano-cautery of no avail, except in the tonsil, and thinks most cases end in spontaneous recovery.
R. Lake.

Delavan, D. Bryson.—*The Prognosis in Nasal Operations performed during Epidemics of La Grippe and Allied Conditions*. "New York Med. Journ.," June 8, 1895.

DURING epidemics of la grippe, surgically speaking, the nose should be left alone, as operative procedures usually cause a relapse, and the depression following them is usually marked. Again, the open wound invites infection, especially in those immediately surrounded by the epidemic. The condition of the patient gives rise to excessive reaction and to retarded convalescence. Again, nasal operations are not usually urgent. Hay fever, being a somewhat analogous affection, similar precautions should be observed.
R. Lake.

Freudenthal, W.—*The so-called Bleeding Polypus of the Nasal Septum*. "Arch. of Ophthal. and Otol.," July, 1895.

THE author reviews the literature of the subject, drawing attention to the rarity of angio-fibromata of the septum. He then relates his own case, which occurred in a woman, aged twenty-two. The tumour was situated over the locus Kiesselbachii, and gave rise to very severe hæmorrhage on its removal. The stump was also the seat of severe hæmorrhage, and required cautery. The growth was a fibro-angioma.
R. Lake.

Grunwald (Munich).—*Pseudo-Bulbar Paralysis—Sarcoma of the Corpus Ossis Cuneiformis*. "Münchener Med. Woch.," 1895, No. 22.

IN a patient with pseudo-bulbar symptoms no anomaly could be found in the nose. The *post-mortem* examination showed a sarcoma of the cuneiform bone, which had involved both nervi optici abducentes, trochleares facialis, and acusticus sinister. The ethmoid bone and the antrum of Highmore of the left side were also filled with tumour masses. Diagnosis *intra vitam* was impossible.
Michael.

Richter, Ernst (Halle-a-S.)—*Die nicht perforirende eidernde Entzündung der Siebenhöhlen und ihre operative Behandlung.* (*The Non-Perforating Purulent Inflammation of the Frontal Sinus, and its Treatment*). Inaugural Dissertation. Leipsic, 1895.

GOOD review of the literature and the present position of the treatment of the disease. The author adds seven cases treated in Habermann's clinic in Graz. All cases have improved or been cured. *Michael.*

Gussenbauer (Vienna).—*Temporary Resection of the Nose for Entrance into the Frontal Sinus, the Ethmoid and Orbital Cavities.* "Wiener Klin. Woch.," 1895, No. 21.

THE author has in two cases removed malignant neoplasms of the ethmoidal region and extending round the circumference by temporary resection of the nose. Both patients have been cured. The details are of surgical interest. *Michael.*

Czerny (Heidelberg).—*Osteoplastic Opening of the Frontal Sinus.* "Langenbeck's Archiv," Band 50, Heft 3.

THE author recommends not to remove the anterior osseous wall of the frontal sinus, but merely to dislocate it, and to close with it the sinus after the cure of the empyema. He performed this operation twice with good result. *Michael.*

Hessler (Halle-a-S.).—*Operation for Adenoid Vegetations with the New Pharyngotome of Schutz.* "Münchener Med. Woch.," 1895, No. 24.

RECOMMENDATION of the instrument.

Michael.

Fouchier, A. A.—*A Few Modifications in the Operating Process of Adenoid Tumours.* "Arch. of Ophthal. and Otol.," April, 1895.

A DESCRIPTION of a combined tongue depressor and mouth-gag, and a modified Hicquet-Munger's curette, the handle of the latter being at a right angle to the shaft, and with a Gottstein's blade instead of a ring knife. *R. Lake.*

Hamilton, H. B.—*Some Interesting Conditions attending Post-Nasal Growths.* "Montreal Med. Journ.," Aug., 1895.

THE first was a case complicated with rhinitis, and giving rise to asthma, which was cured by treatment of the rhinitis and removal of the growths; the other a case of ethmoidal disease caused by a similar condition and relieved by treatment of the rhinitis. *R. Lake.*

NECK, THYROID, &c.

Notkin (Kiew).—*Contribution to the Physiology of the Thyroid Gland.* "Wiener Med. Woch.," 1895, Nos. 19 and 20.

THE author has produced a proteid from the thyroid gland which he calls thyrotoxin. By injection of this proteid into animals he produced all symptoms of cachexia strumipriva. He concludes from his experiments that the thyro-colloid is not a secretion of the thyroid gland, but a secretion of the whole body. The thyro-proteid is the poison which intoxicates the organism in cases of cachexia strumipriva. The function of the thyroid gland is the purification of the body from thyro-proteid. The gland removes it from the body along with its toxic power. It is probable that Basedow's disease will be successfully treated by application of thyro-proteid. *Michael.*

Scherk (Hamburg).—*The Function of the Thyroid Gland*. "Aerzte Rundschau," 1895, No. 25.

REVIEW.

Michael.

Revillod (Geneva).—*On Thyroidismus*. Schweizer Aerzte in Lausanne, Meeting, May 4, 1895.

TWO groups of symptoms are chiefly caused by anomalies of the secretion of the thyroid gland—myxœdema and Basedow's disease. The latter is produced by excess of secretion; the former by decrease of secretion. Also on the substance of the bones the Basedow (Graves) disease has an influence, as well as upon diuresis. Cod liver oil is a good medicament for the symptoms of Basedow's disease.

MORIN (Colombier): Much in this question is not yet clear. It is curious that in some cases the symptoms of Basedow's disease are influenced for good by the use of thyroid gland. The author has observed some families in which those who had goitres were healthy; the others with atrophic thyroid glands became tuberculous.

GIRARD (Berne) also has made investigations on the relation between goitres and tuberculosis which were first observed in the first quarter of this century, and has found that malignant tumours (excluding struma maligna) are observed three times more frequently in strumous than in non-strumous persons. Tuberculosis is three times more frequent in non-strumous than in strumous persons. As to diseases of the heart, there exists no difference. Fractures of the bones are much more frequent in strumous persons. Traumata are equally observed in strumous and in non-strumous persons.

Michael.

Eulenburg (Berlin).—*Abuse of Thyroid Tabloids*. "Deutsche Med. Woch.," 1895, No. 32.

FOR lipomatosis, since Leichtenstern's publication, these tabloids have been often used by patients without medical advice. Their employment is often followed by severe nervous symptoms. The sale of thyroid in tabloids without restriction should not be allowed.

Michael.

Grube (Neuenahr).—*Etiology of Basedow's Disease*. "Neurol. Centralbl.," May, 1894.

THE author believes that the disease is caused by auto-intoxication.

Michael.

Pel P. K. (Amsterdam).—*Myxœdema*. "Volkman's Vorträge," Heft, No. 123.

REVIEW and photographic reproductions of two cases of myxœdema treated by the author with thyroid gland with good results.

Michael.

Lichtwitz (Bordeaux).—*Branchial Fistula in the Neck cured by Electrolysis*. "Arch. d'Electricité Médicale," April 15, 1895.

THE fistular orifice was situated about two centimètres to the left of the middle line between the hyoid bone and thyroid cartilage. A whalebone probe was passed upwards and inwards to the right for six and a half centimètres behind the great cornu of the hyoid, and could be felt by the patient at the level of the right tonsil. Treatment was called for on account of the discharge, which involved the continuous wearing of a dressing, but cutting operations were refused. Electrolysis was carried out by means of a fine electrode one millimètre in diameter, and covered with caoutchouc to within two centimètres of its extremity. This was attached to the negative pole, and after cocainization, currents of from two to three millampères were tolerated. Seventeen applications were made at intervals of from a week to a fortnight. The fistula was then closed, and at the end of ten months still continued so.

Dundas Grant.

Kopfstein (Prague).—*On a Lateral Air Tumour of the Neck covered with Cylindrical Epithelium.* "Wiener Klin. Rundschau," 1895, Nos. 27 and 28.

A PATIENT, twenty-nine years old, remarked that during blowing and snuffing an elastic tumour appeared under the left half of the lower jaw. On pressure the tumour disappeared. The tumour enlarged while the patient was at work, and disappeared during rest. Operation was performed consisting of the extirpation of a sac with thin blue walls. When it was opened air was discharged. The extirpated tumour was eight centimètres long. The internal surface was covered with ciliated epithelium. The author believes that it originated from an incompletely closed branchial cyst.

Michael.

EARS.

Lester, J. C.—*An Electric Pressure Sound for the Direct Vibration of the Membrana Tympani.* "New York Med. Journ.," June 8, 1895.

A DESCRIPTION (illustrated) of the instrument and motor vibrations of from five hundred to fifteen hundred a minute, and with an amplitude of from zero to half an inch, are obtainable. The motor is held in one hand and the sound in the other. It is easy of application, causes little reaction, and is of especial value in sclerotic and atrophic conditions.

R. Lake.

Marple, W. B.—*Successful Mechanical Treatment of some unusual Aural Conditions.* "New York Med. Journ.," June 1, 1895.

THE writer refers to Blake's method by a strip of rubber to exert pressure on the malleus. The first patient, whose hearing distance in the right ear was one foot, complained of vertigo in that ear when the head was tilted to that side. Blake's rubber strip was applied eventually with excellent results, but subsequently exchanged for a disc of paper, which completed a cure. In the two remaining cases a particular note caused a loud noise in the ear; one was cured with the spring alone, and the other by the spring followed by the disc. An explanation of these buzzings is afforded by Helmholtz, who attributes it to the cog-like articulation between the incus and malleus, the former, in any excessive outward movement, leaving the latter behind, and being struck by the returning hammer. The writer attributes an undue prominence of these sounds to a laxness of the ligaments of the articulation, the spring tightening up the joint, and the vertigo in the first case to an abnormal laxness of the articulations in the chain of ossicles.

R. Lake.

Hefleblower, E. C.—*Clonic Spasm of the Tensor Tympani.* "New York Med. Journ.," March 16, 1895.

PREVIOUSLY reported cases are quoted by the author, who then adds the two following cases from his own practice:—(1) A woman, thirty-five years of age, had suffered from a clicking noise in the ears in conjunction with a twitching of the muscles of the throat. Exertion and fright made it worse; rest and quiet relieved it. In the left ear a perceptible indrawing of the membrane was seen at every click. The palate was affected, but not the larynx. The patient's father was insane. In the second, a man of mature age, the noise was louder; heard at two feet away; both the palate and larynx were affected. This patient was nearly insane. The author draws attention to the question of mental affections in relation to the disorder under consideration. He next reviews most minutely the

nerve connections and supply of the muscles affected, concluding—"It seems to me, then, that clonic spasm of the tensor tympani and the tensor palati, and sometimes that of the throat, is due to a pathological condition of the otic ganglion, and frequently of Meckel's as well, with occasional involvement of their branches of communication as well," etc. *R. Lake.*

Burnett, C. H.—*So-called Oto-Massage.* "Med. News," Aug. 10, 1895.

A SWEEPING condemnation of all forms of oto-massage, except the exercises of Urbantschitsch. Direct pressure, according to the author, bruises the tympanum, and vibratory sounds too quickly tire the ears. *R. Lake.*

Jackson, Chevalier.—*Oto-Massage.* "Med. News," Sept. 7, 1895.

A REPLY to the former, defending the practice where used skilfully and with knowledge. *R. Lake.*

Plique, A. F. (Paris).—*Electricity in Otology.* "Annal. des Mal. de l'Oreille," Sept., 1894.

ERB's method of applying the active pole to the tragus is recommended. An accurate galvanometer (milliampère-meter) is indispensable. To excite acoustic phenomena in the normal subject, a current of at least four milliamperes with cathodal closure, or of six to eight with anodal opening, is required. If less than this produces it, there is hyper-excitability of the auditory nerve. This is found in cases of perforation of the membrane, but in the absence of such lesion it indicates hyperæmia of the auditory nerve, as from disease of the labyrinth or middle ear, meningitis, or cerebral tumour. Diminished excitability is found in many normal subjects, but it indicates, according to Rohrer, in disease, such "torpor" of the nerve as he finds in auditory neuritis, either primary or secondary to cerebral or medullar lesions, and sometimes consequent on changes in the conducting apparatus. He looks upon it as the stage in degeneration following that characterized by hyper-excitability. The most useful application in tinnitus is that of feeble currents (two to three milliamperes) applied for from five to fifteen minutes with the anode on the tragus. In otalgia, Masini combines the action of the anode of the continuous current with that of cocaine by applying it by means of an electrode introduced into the meatus, into which a small quantity of a ten per cent. solution of the drug has been instilled. Other remedies might be employed in the same way. Plique credits Gradenigo with effecting amelioration in sclerosis of the middle ear by means of the constant current.—[This paper is a useful *résumé* of the subject, and contains valuable references to the literature, but very little personal observation or opinion. The caution necessary in the use of the agent is strongly emphasized.—ED.] *Dundas Grant.*

Buck, A. H.—*The Prognosis of Operations upon the Mastoid Process in Diabetic Persons.* "New York Med. Journ.," June 29, 1895.

TEN recorded cases are quoted, and four of the author's (two of which recovered). Of the former, three were subjected to operation, with two recoveries; of the seven not operated on, five died. The author draws the conclusion from these data that the prognosis in such cases is very grave. *R. Lake.*

Holinger, J.—*An Unusual Case of Aural Deformity; Operation.* "Arch. of Ophthal. and Otol.," April, 1895.

THE left side of the head was smaller than the right, and this was especially noticeable in the face. The lobule of the ear was smaller than normal, and the

upper insertion of the concha was drawn downwards towards the mouth, from which it was one and a quarter centimètres distant; the tragus was missing, and the external canal was only of slight depth. The concha was detached in its horizontal part and attached in a vertical direction in an incision prepared for it. The ascending ramus of the jaw on that side was absent. *R. Lake.*

Lederman.—*Foreign Bodies in the Ears and Noe.* "Arch. of Ophthal. and Otol.," April, 1895.

Two cases of unsuspected foreign bodies in the nose are reported—a button, and a piece of "sugar-string," four inches long. Of the aural cases, the first was a "bed bug," causing tinnitus; the second, somewhat similar, was a small beetle; the third a roll of tinfoil; the fourth a button; the fifth a corn seed; the sixth a pebble, which was removed under ether; the seventh a coffee bean, which also necessitated the administration of ether for its removal. The instruments named as most serviceable are the dull ring curette, the mouse-tooth forceps and the syringe, and chloroform is advocated to kill insects in the ear. *R. Lake.*

Danziger, F. (Beuthen-o-S.)—*Contribution to the Case-History and Etiology of Carcinoma of the Organ of Hearing.* "Monats. für Ohrenheilk.," July, 1895.

DANZIGER refers to Kretschmann's paper in the twenty-fourth volume of the "Archiv für Ohrenheilkunde," in which are published sixteen cases of this affection. He quotes Schwartz's opinion that such cases are often diagnosed as necrotic caries of the temporal bone. He describes a case of his own, in a patient aged fifty-four, who was the subject of a long-neglected otorrhœa. The meatus was occupied by a whitish-red ulcerated tumour, which recurred on removal. There was extensive caries of the osseous parts, with abundant granulations, and the surrounding glands were distinctly enlarged. Microscopic examination revealed typical carcinoma. Primary carcinoma of the meatus partakes of the anatomical structure of the part, while that originating in the middle ear is usually superposed on a chronic suppuration. The general etiological factors are, a chronic suppurative median otitis, the habit of poking instruments into the ear (Kretschmann), and the cancerous predisposition. *Dundas Grant.*

Goldstein, M. A.—*Exfoliation of the Cochlea.* "Arch. of Ophthal. and Otol.," April, 1895.

IN this case not only the cochlea and vestibule were exfoliated, but nearly the whole petrous in separate portions. The hearing perception on that side was as given below:—

Hearing tests.	Hearing capacity.	
	Both ears closed.	Good ear closed.
Loud conversation.....	300 centimètres.	900 centimètres.
Whispered conversation	30 "	90 " "
150 centimètre watch	5 "	15 " "
Politzer's acoumeter	15 "	35 " "
Galton's whistle, high pitch.....	30 "	60 " "
Differentiation of sound of C from C ² tuning-fork	8 "	35 " "
Musical notes of loud-sounding har- monium differentiation of C, third octave from C fifth octave	35 "	90 " "
The patient died of tuberculosis.		<i>R. Lake.</i>

Greene, D. M.—*Reports of Seven Interesting Ear Cases.* "Arch. of Ophthal. and Otol.," July, 1895.

THE first and second cases were operated upon for mastoid suppuration. In the second both the dura mater and also the lateral sinus were exposed by caries. The third had symptoms of mastoid involvement, but refused surgical treatment, dying some seven weeks later of meningitis. The fourth died with symptoms of cerebral abscess; he also refused operation. The fifth was a case of mastoiditis, cured by Wilde's incision; the next was one of double mastoid operation, with recovery. In the last one all the temporal bone was removed, except that part surrounding the carotid artery, the patient eventually dying. *R. Lake.*

Lederman.—*Diffuse External Otitis due to Carbolic Acid.* "New York Med. Journ.," May 18, 1895.

THE patient, who suffered from irritation of the external auditory meatus, was induced by a friend to inject carbolic acid into her ears; this she did, but on account of imperfect solution, injected the crude drug, causing in twenty-four hours the most intense cedema of the ears and surrounding soft tissues, and also symptoms of poisoning by the acid. She completely recovered under simple treatment.

R. Lake.

Bacon, G.—*A Case of Cerebellar Abscess as a result of Chronic Suppurative Otitis Media; Operation; Death; Autopsy.* "American Journ.," Aug., 1895.

THE patient had suffered with right otitis media suppurativa chronica for five years, the membrana tympani being destroyed, and the attic filled with granulation tissue. The symptoms presented were nausea, vomiting, and lateral vertigo—present even when lying down; loss of bone-conduction very marked. When these symptoms had been present nine days the mastoid was opened and free drainage established, and the attic was cleared out. The symptoms were ameliorated for a short time, but gradually returned, together with lateral nystagmus and optic papillitis on that side, and facial paralysis, severe headache, slow pulse, and staggering gait. The cerebellum and temporo-sphenoidal lobes were explored with negative results. The patient died three weeks after, and an abscess was found in the right cerebellar hemisphere in its anterior part obliterating the corpus dentatum and encroaching on the middle cerebellar peduncle. *R. Lake.*

REVIEWS.

Kobler (Saragewo).—*Ueber Fremdkörper in den Bröncchien und den durch dieselben folgenden Zustände.* ("On Foreign Bodies in the Bronchi and their Consequences.") Wien: Holder. 45 pp.

FOREIGN bodies are much more often observed in the right than in the left bronchus, because the right descends more steeply from the trachea. Of six cases observed by the author the foreign body was situated five times in the right bronchus. Sometimes the foreign body wanders from one bronchus to the other. A careful examination can show such an event with certainty. In one case acetic essence was drawn into the left bronchus, and caused there a fatal pneumonia. Sometimes the place of

the foreign body is indicated by pain in the affected half of the thorax. A case was interesting in which a small pipe was inspired into the right bronchus. During every inspiration the pipe produced a tune, by which its situation could be located exactly. Sometimes these events are combined with disturbance of the general senses as long as the foreign body is situated in the bronchus. Auscultatory anomalies may be absent in cases in which the foreign body is perforated, as, for instance, a glass-perl or a piece of a tracheal canula. A complication often observed is pneumonia. It is very dangerous when the pneumonia, occurring as it does sometimes from unknown causes, arises in the non-affected side, because then both sides of the thorax are diseased. Gangrene, abscesses of the lungs, pleuritis, and bronchiectases are in other cases the consequences of the event. Sometimes actino-mycosis is also observed. Tuberculosis may arise if it had existed in a latent form before the aspiration, or if the foreign body was infected by tubercle bacilli. The author then relates some instructive cases from his own practice, and concludes with treatment. If the foreign bodies are fixed in the bronchus, the treatment may be expectative and waiting upon dangerous events, as they arise. In cases of mobile foreign bodies tracheotomy should be performed as soon as possible. In very severe cases the opening of the bronchi or of the posterior or anterior wall of the thorax may be considered.

Michael.

Zuckerkandl.—*Anatomie normale et pathologique des Fosses Nasales et de leurs Annexes pneumatique.* Par F. ZUCKERKANDL. Traduit sur le deuxième Édition Allemande par L. LICHTWITZ et P. GARNAULT.

As there will be an English edition of this work before the medical public within a short time, we shall defer any criticism on the book itself, and confine ourselves to a few brief remarks on this (French) edition. Firstly, we congratulate the translators on the admirable way they have performed their task; the original text has been closely followed. The illustrations in the second volume are from the original stones, and to those to whom French is an easier tongue than German this edition is to be strongly recommended.

Onodi (Buda-Pesth).—*Die Innervation des Kehlkopfes, nach eigenen anatomischen, physiologischen und pathologischen Untersuchungen.* ("The Innervation of the Larynx. Original Anatomico-Physiological and Pathological Researches.") With four tables and ten illustrations in the text. 92 pages. Vienna: Holder. 1892.

ALONG with Luschka the author has found that the recurrent nerve alone innervates the laryngeal muscles, and that the external part of this nerve (the laryngeus superior) innervates the crico-thyroid muscle and the internal mucous membrane. The nervi laryngei, their anastomoses, physiology and varieties, are exactly described. The author is able to prove that in dogs the external part of the superior laryngeal nerve and the anastomosing branch of the pharyngeal part of the vagus participate in the innervation of the crico-thyroid muscle. When this anastomosis is resected the crico-thyroid muscles, two months later, became degenerated. The superior laryngeal nerve is, without doubt, a sensory nerve.

The author has been able to isolate the single part of the recurrent nerve, and to show that the isolated recurrent nerve always produces abduction without any contraction of an adductor muscle. By this method of isolation he was also able to show that after death the muscles die one after the other, beginning with the musculus posticus. Some branches of the sympathetic nerve participate in the innervation of the larynx. The accessory nerve has no relation to the muscles of the larynx. In a dog the author has found a phonatory centre eight millimètres in length in the region of the corpora quadrigemini and the corresponding part of the fourth ventricle. The phonatory centre discovered by Krause was also confirmed by the author. The paper concludes with a detailed description of a pathological case, which is a clinical confirmation of Semon's abductor theory.

Michael.

ASSOCIATION MEETINGS.

BRITISH MEDICAL ASSOCIATION.

Meeting, August, 1895.

SECTION OF LARYNGOLOGY.

The Representation of Abduction of the Vocal Cords in the Cerebral Cortex. By J. S. RISIEN RUSSELL, M.D., Assistant Physician and Pathologist to the Metropolitan Hospital.

The author first alluded to the fact that others who have preceded him in this field of experimental research have been able to demonstrate the existence of a focus in the cerebral cortex, excitation of which results in abduction of the vocal cords. This was first shown by Krause in the dog, and was confirmed in the dog, cat, and monkey by Semon and Horsley, who in an elaborate investigation discovered many new points of great importance with regard to the central innervation of the larynx. These observers were unable to find any representation of abduction of the vocal cords in the cortex of the dog and monkey, and attributed its occurrence in the cat to some peculiarity associated in some way with the special respiratory requirements of this animal. But certain considerations suggested to the author that it was probable that a focus for abduction of the vocal cords exists in the cerebral cortex even in animals in which other observers had failed to detect it. Among these considerations was the fact that Semon and Horsley obtained abduction from the cortex of the cat, and, further, that they demonstrated the existence of a focus in the internal capsule, excitation of which resulted in abduction of the vocal cords in the dog and in the monkey. Unless it were assumed that these experimenters were exciting some abductor centre in the region of the basal ganglia, which was extremely unlikely, the most natural supposition was that they were stimulating excitable fibres of the internal capsule, which were connected with a certain part of the cerebral cortex, the grey matter of which, if stimulated, would yield abduction of the vocal cords.

It seemed not unlikely that this focus in the cerebral cortex might be situated close to that from which adduction of the vocal cords had been obtained, but that the adductor representation was so powerful that it was impossible to obtain a stimulus at once strong enough to evoke abduction of the cords, and delicate enough not to spread to, and evoke from the more powerful abductor centre a liberation of energy capable of overpowering the effect from the less powerful abductor centre. In order to make it possible to demonstrate the existence of an abductor focus in the cortex, under such circumstances, it was necessary to lessen or abolish the adductor effect on the vocal cords, and the simplest way that suggested itself as likely to effect this was to divide the adductor fibres in one or both recurrent laryngeal nerves, leaving intact the abductor fibres.

This led to his making use of a former observation, in which he found that it was possible to separate, in the recurrent laryngeal nerve, the abductor from the adductor fibres, so that stimulation of one bundle resulted in abduction of the vocal cord, and of the other in adduction.

The adductor fibres were accordingly separated from the abductor in one recurrent laryngeal nerve, and the former bundle of fibres was then divided transversely, leaving the latter bundle intact, after which it was found possible to evoke abduction of the vocal cords in the dog on excitation of the prorean convolution in front of and below Krause's adductor-centre, the two foci being separated by the supra-orbital sulcus. The division of the adductor fibres in one nerve was found sufficient to allow this result to be obtained, and under these conditions excitation of the prorean convolution of either cerebral hemisphere resulted in abduction of both vocal cords, while excitation of Krause's adductor focus naturally only resulted in adduction of the vocal cord, the adductor fibres of whose recurrent laryngeal nerve were intact. The advantages of being able to leave the adductor fibres in one nerve intact was great, as it allowed abduction and adduction of the vocal cord to be evoked on excitation of their respective cortical centres, at the same stage of ether narcosis.

Having once determined the existence of this abductor focus in the dog, in the way described, it became possible to evoke the movement in some dogs without adopting the preliminary measure of dividing the adductor fibres of one recurrent nerve. In such animals it was found that the movement of abduction could best be evoked from the anterior composite gyrus, below the adduction centre and slightly behind the point on the prorean gyrus from which it could be obtained when the adductor fibres of one nerve had been divided.

Both foci were, however, close together with the supra-orbital sulcus separating them.

On turning his attention to the cat, he found, in confirmation of Semon and Horsley, that adduction of the vocal cords was sometimes to be obtained on excitation of a point just above and in front of the anterior end of the coronal fissure, corresponding to that discovered by Krause in the dog; but that it was more frequently to be obtained when the coronal convolution was stimulated a little posterior to its point of junction with the anterior composite gyrus.

With regard to abduction in the cat, he found that it was possible to evoke this movement on excitation of a point on the prorean gyrus corresponding to that from which he was able to obtain the same movement in the dog after division of the adductor fibres in one recurrent nerve.

The cat differed from the dog in that this movement could always be obtained from the prorean gyrus without previous section of the adductor fibres of one recurrent nerve.

The focus on the prorean gyrus from which abduction was obtained in the cat was shown to be quite distinct, and widely separated from that from which Semon and Horsley were able to obtain the movement in this animal. The probable nature of the focus determined by these observers was discussed, and the author pointed out that he had found a similar focus in the dog also.

Excitation of this point on the lower border of the hemisphere, in the anterior composite gyrus, just above the rhinal fissure, resulted in his hands in arrest of the vocal cords in abduction both in the cat and dog. Further, in both animals, there exists a focus on the anterior composite gyrus, in front of that last described, and just behind the junction of the lower end of the supra-orbital sulcus with the rhinal fissure, from which he was able to arrest the vocal cords in adduction, *i.e.*, in the expiratory phase of their excursions.

The paper was illustrated by lantern slides of the cærebral hemisphere of the cat and the dog, and by others of tracings of the movements of the vocal cords obtained by means of an india-rubber bag inserted between the cords, communicating with a Marey's tambour by means of an india-rubber tube, and the writing point connected with the tambour recording on the blackened surface of a Hürthle's kymographion.

The Etiology of Mucous Polypi of the Nose. Introduced by Prof. GUYE (Amsterdam), Dr. LUC (Paris), Dr. MCBRIDE (Edinburgh).

Prof. GUYE: In this paper I propose considering two theories, those of Woakes and Grünwald. Woakes considers nasal polypi the result of necrosing ethmoiditis; Grünwald as secondary to empyema of the accessory nasal cavities. Zuckerkandl has criticized both theories, and I agree with him when he says there is not sufficient pathological evidence brought forward to substantiate either.

My clinical experience accords with Zuckerkandl's opinion, which is supported by his own extensive pathological investigations. My own opinion is that to the etiology of nasal polypi Goethe's words are applicable: "In's innere der Natur dringt kein erschaffener Geist." In my own investigations, whilst finding no cause for the majority of nasal polypi, yet amongst these were a few where I found such a cause, but the very rarity of these cases confirmed me in my opinion that we have no right to generalize from these cases.

In one case I found nasal polypus alternating with common fœtid ozæna, as follows: a young lady, who had been successfully treated by me for ordinary fœtid ozæna, returned after one year with simple nasal polypi, after the removal of which she began again to suffer with ozæna, which quickly disappeared under the treatment previously adopted. In

another case I had operated on a middle-aged gentleman for empyema of Highmore's antrum, and during the subsequent treatment, which was much protracted owing to the irregular attendance of the patient, I discovered numerous polypi springing from the edges of the foramen maxillare, and obstructing the passage of fluid injected into the antrum through the alveolus. This is the only case in which I have seen nasal polypi produced by empyema of the antrum.

In a third case I found one nostril completely blocked by polypi, and on removing them I found as the probable cause of their formation a large rhinolith, the removal of which cured the patient. Since writing the above in reference to the antrum of Highmore I have seen one similar case where the nasal polypi were the result of empyema of the frontal sinus. Beyond these three cases I could not add many where I could assign any definite cause for the formation of nasal polypi.

Chronic catarrh, an irregular septum narium, and habitual mouth-breathing may or may not have an etiological bearing in this respect; for though they are often found in combination with nasal polypi, yet they are more often met without. The same can be said of rhinoliths, empyema, and ozæna. The conclusion to which this points is that we must ascribe to the mucous membrane a peculiar predisposition which makes it produce nasal polypi as a reaction to noxious influences of very different natures. I may also allude to the climateric influences of some places. There is a place in Holland from which I have seen an immense number of patients with nasal polypi, and one of them told me that it was the popular opinion amongst the inhabitants there that nasal polypi were of unusual frequency amongst them. This may be quite fortuitous and easy of explanation by the fact that patients suffering from a certain disease always hear of a number of similar ones, and easily get a false impression as to its frequency. For this reason I, at present, withhold the name of the place, and I only mention it as a hint to further observation in this direction, which, in the future, might throw some light on this question. Although I am prepared to admit it as possible that either histological, bacteriological, or other researches will some day afford us a more definite etiology, yet for the present we must be satisfied with the rather eclectic theory which I have sketched.

The Etiology of Mucous Polypi of the Nose. By P. MCBRIDE, M.D

In a meeting of this kind it seems hardly desirable to define the term "mucous polypus," yet this is almost an essential preliminary to any discussion of the subject. I suppose that most of you will agree in accepting my definition, viz.: a mucous polypus is a tumour of the nose, having the following characteristics—(1) a smooth or more rarely a lobulated surface, (2) a greyish-blue colour, sometimes merging into a delicate shade of pink, (3) a tense appearance and feeling, (4) a jelly-like consistence. If I add that the attachment may be a broad or thin pedicle, I shall, perhaps, have given sufficient details for the present purpose.

The question of etiology may be approached either from the pathological or clinical aspect, and perhaps it will be well to consider the data

furnished by each. As you are aware, most observers are now agreed that the microscope shows mucous polypi to be simply œdematous fibromata. They generally grow from the upper and anterior part of the nose, being frequently attached to the walls of the middle meatus, and more rarely to the free edge of the middle turbinated body. I am not aware that growths corresponding in character to mucous polypi have often been seen to spring from the inferior turbinated body or below it. On the other hand, in the last-named situation we meet with a variety of tumour which has been described as papilloma. It differs from the mucous polypi in its red colour and papillary surface, but its microscopic structure is similar. Such growths rarely, if ever, spring from the upper regions of the nose. We have, then, two varieties of growths differing in microscopic characters only, but histologically identical; one is found almost universally growing from the upper parts of the nasal cavity, while the other is usually only found in the lower. This fact gives good cause for reflection, and would lead us to believe that position has much to do with the macroscopic characters of polypi. If we once admit this, it follows as a corollary that their etiology can in part be explained by physical laws.

This is a conclusion which we can also reach by another chain of reasoning. Polypoid tissue is excessively œdematous, and obviously the œdema must be increased by the pendulous position which the growths nearly always assume. Œdema causes increase of size; therefore, part of the growth in bulk, at least, must be explained by physical laws.

It has always appeared to me that this hypothesis is self-evident, and I am quite aware that somewhat anologous theories have been held by others. Even if we admit so much, however, we are still far removed from any satisfactory explanation of the initial stage. It is very easy to frame an hypothesis which may explain certain cases. Thus, we may assume that at some particular point, whether as a result of inflammation or as a consequence of the pressure of a small vascular loop, a projection of the mucous membrane occurs and hangs downwards. If we admit so much it follows that we can explain the occurrence of a single polypus, for wherever one hypothetical projection has become pendulous its increase in size will have been assured. Even if we accept this as correct, it is difficult to understand why polypi should be usually multiple. It appears to me that the explanation of the origin of nasal polypi which I have suggested and which I believe to be, so far as it goes, correct for certain cases is incomplete in some important particulars. We must, therefore, assume some abnormal condition of the mucous membrane to start with. I cannot believe that inflammation alone is enough to account for more than a proportion of cases. I can understand that if the mucosa on the edge of the middle turbinated body or margins of the hiatus semilunaris becomes inflamed irregular excrescences may develop, and these aided by gravity may finally become polypi. In all likelihood the growths as frequently associated with empyema of the antrum originate in this manner. Again, it must be remembered that the favourite seat of origin of polypi is the anterior region of the middle meatus, just where irregularities of the mucosa are normally found, and this fact may be adduced

in favour of an inflammatory origin in certain cases. My own clinical experience, too, leads me to think that the anterior part of the nasal character is the most common seat of multiple growths, and the nearer we approach the naso-pharynx the less is the tendency to multiplicity. I need only remind you of the comparatively frequent occurrence of single growths attached to the margins of the choanæ—the so-called fibromucous polypi. Again, I suppose that most of us are familiar with the condition known as polypoid hypertrophy. The most typical specimens I have seen originated from the free margin of the middle turbinated body. In some instances these enlargements when removed show very distinctly two microscopic characters, (1) the part nearest the seat of attachment is pink and readily recognized as simple hypertrophy; (2) the part which is furthest from the seat of attachment is grey, translucent, gelatinous—in short, presents the characteristics of polypoid tissue.

The deductions I should feel inclined to draw from the above data are: (1) That gravity is an important factor in the production of polypi; (2) that in a certain proportion of cases inflammatory changes alone may be the starting-point of the disease.

I fear, however, that many cases cannot be explained by this simple conclusion.

Thus we are all too familiar with noses in which, even after the most careful removal and cauterization, a few weeks' absence of treatment is followed by rapid recurrence. When such a case is seen after, it may be only a month, the whole of the middle meatus looks as if it were producing small growths, perhaps, about as large as currants, and closely packed together. For such cases some other explanation must be sought, and I fear that so far no data have become available, by means of which we can with any certainty trace the cause. I suspect that the fault lies with the mucous membrane, and it is just possible that histological examination of the middle turbinated region carried out on a number of specimens might show deviations from the normal in some instances which if exaggerated would give rise to polypi. Again, it is possible that a similar line of investigation, carried out in cases where polypus formation had just begun, might throw light upon what we must consider a dark spot in rhinology.

I have already referred to the papillary growths, which are found attached to the lower parts of the nasal chamber. You will remember that these have been shown to be identical with polypus in histological characters. A tempting hypothesis would be that such papillary degeneration may occur in the upper regions, and that then the projections hang downwards and develop into polypi. However, we have no proof that this ever actually occurs, and my own clinical experience is against the occurrence of macroscopic papillary swellings in the upper parts of the nasal chambers. It is, however, conceivable that microscopic papillæ may precede the occurrence of polypi.

You are of course aware that Dr. Woakes has attempted to show that necrosis of the middle turbinated bone is the cause of nasal polypus, in most, if not all cases. I am quite prepared to admit that in a certain proportion of cases empyema of the ethmoidal cells may, and does, give

rise to polypoid growths, but to state that disease of bone is the primary lesion in all cases of polypus is obviously a mistake. The objections which give the *coup de grâce* to this theory, are—

1. That no satisfactory proof has been adduced in its support ;
2. That where the muco-periosteum is converted into gelatinous tissue, the probe is certain to reach the bare bone, if it be employed with even moderate force ;

3. In many cases of polypus we have none of the symptoms commonly associated with disease of bone, viz., copious suppuration, etc.

Grünwald ("Die Lehre der Naseneiterungen," p. 52) has committed himself to the statement that in most cases polypi are pathognomic of empyema of an accessory cavity.

This assertion is founded on a comparatively small number of cases—thirty-three in all. Of them he tells us that only in five was no affection of an accessory cavity diagnosed, although he hints, that in one at least, it may have existed.

I would ask those among you who have read Grünwald's work, whether you consider it possible to diagnose ethmoidal empyema, as described by him in cases of well marked nasal polypi, with the growths *in situ* ? You will recollect that he relies upon the presence of pus, and indications of bare bone in the region of the middle turbinated body for his diagnosis. After the removal of the growths, both these conditions—especially the second—may possibly exist as a direct result of surgical interference, and also because, in mucous polypus, the muco-periosteum is degenerated, and so admits the probe readily to the surface of the bone. For this and other reasons I consider that Grünwald's statement is much too sweeping. At the same time, it must be admitted that many cases of supposed polypus are actually the result of empyema of one or more of the accessory cavities, usually, in my experience, the antrum of Highmore. I do not know that the polypi, produced by this cause, can always be distinguished from others ; but in a large proportion of cases they present certain peculiarities. Thus, not uncommonly, they are of a distinctly red colour ; they bleed more readily when touched ; pus is present in the nostril, and the patient complains of a bad taste and smell, while frequently the affection is unilateral, although occasionally these mucous polypi are confined to one side. While I admit these differences, still the appearances resulting from empyema of the accessory cavities are often so like true polypus, that we cannot, in all cases, distinguish one from the other.

My own view then as to Grünwald's statement is that while it contains an element of truth it must be accepted with caution. Those of us whose experience considerably surpasses thirty-three cases of mucous polypus will probably arrive at the conclusion that in a considerable proportion of cases the cause is to be sought in empyema of one of the accessory cavities, but that in a very much larger proportion we have to do with growths which owe their origin to some other cause or causes.

In cases of that very rare affection, coryza caseosa, a polypoid mass, which is usually of a somewhat red colour, and bleeds freely when

touched, is commonly—so far as the term is applicable—found. It is somewhat remarkable, and at the same time indicative of the difficulties with which our subject is beset, that in discussing the etiology of nasal polypus it is hardly necessary to refer to the histories given by patients because they yield practically no assistance in arriving at a conclusion.

It has struck me, however, that in conclusion, it may not be altogether uninteresting to lay before you a very rough analysis of 114 cases of nasal polypus, extracted from my hospital records. The data are somewhat meagre, as they simply comprise such facts as name, age, residence, occupation, and diagnosis. Out of the 114 cases I find that 63 were males and 51 females. In 103 patients the ages were noted, and the results may be briefly stated thus—

Age.	Male.	Female.	Total.
1—10 years	1 (age 8)	1 (age 8)	2
10—20	4	5 (youngest 11)	9
20—30	17	17	34
30—40	7	11	18
40—50	12	3	15
50—60	7	6	13
60—70	8	3	11
78—80	1	0	1

From these figures we may deduce the following data with regard to hospital cases—

1. The disease is rather more common in males than in females.
2. It is most common between twenty to thirty years of age.
3. It is least common at the extremes of life, *i.e.*, under twenty and over sixty.

With regard to occupation I have not been able to trace its influence. I may, however, mention that the occupations were noted in seventy-five patients, and fairly representative of the class of persons who frequent our hospitals. The following list comprises all those callings which supplied three or more cases :—

	Number of cases.
Coachmen	3
Clerks	5
Constables	3
Domestic servants.....	7
Engineers	5
Housewives	7

As I have said, these cases were all taken from my hospital records, and, therefore, refer to the poorer classes.

For the sake of comparison I have collected eighty-nine cases from the records of my private practice. In these notes I take of my private patients I do not, as a rule, mention the profession, so that data on this point are wanting.

Among the eighty-nine patients there were forty-six females and only forty-three males. The age was stated in seventy-seven instances, and give the following results :—

Age.	Male.	Female.	Total.
1-10	0	0	0
10-20	1 (aged 10)	1	2
20-30	3	5	8
30-40	6	9	15
40-50	6	7	13
50-60	12	5	17
60-70	10	8	18
70-80	1	3	4

These statistics form a very considerable contrast with those supplied by my hospital books, and it certainly looks as if social position to some degree modified the course and occurrence of nasal polypus. Thus we find that among the wealthier classes (1) the disease appears to be somewhat more frequent in women than in men. (2) That it is most common after middle life, the greatest number of cases occurring between sixty and seventy as against twenty and thirty in hospital patients.

It is somewhat difficult to explain results derived from my two sets of statistics. I do not wish to insist upon any deduction from them because the numbers are too small to justify sweeping assertions. Only it almost seems as if a hard and exposed life leads in those who are predisposed to nasal polypus to earlier development of the affection. I may be asked why I have not included in my statistics the presence or absence of empyema affecting one or more of the accessory cavities. To this I should reply that while in a certain proportion of my cases I have been able to demonstrate the presence of empyema of the antrum—sometimes bilateral—and in a very much smaller number the existence of ethmoidal and sphenoidal disease (the latter only once to my satisfaction), and while I have occasionally suspected the existence of frontal empyema, I do not think that our present methods of diagnosis are sufficiently exact to enable us in doubtful cases to arrive at a conclusion without exploratory puncture. This last method is really justifiable when applied to the antrum, but in many cases we may suspect frontal empyema, and yet the urgency of the symptoms by no means justifies external operation. Under these circumstances I have avoided any attempt to define the proportion of cases in which inflammation of the accessory cavities leads to the presence of polypi.

(To be continued.)

FRENCH SOCIETY OF OTOTOLOGY AND LARYNGOLOGY.

The Neuro-motor Affections of the Larynx. Dr. P. RAUGÉ.

The author desired to speak of certain points which he had intentionally neglected in his reports (*see* his extensive paper in the "Revue de Laryngologie," 1895, No. 10).

Motor-laryngeal nervous affections may evidently affect the whole motility of the larynx, but much more commonly they are only partial

and limited to certain muscular groups, from the irritation of which results contraction or that functional disturbance which produces paralysis. The manner in which these circumscribed alterations are localized certainly represents one of the least solved problems of laryngeal neuro-pathology. Nothing better has been devised up to now than to take each of the muscles of the larynx one after the other; to imagine the consequences which suppression of the function of this muscle (paralysis), or its opposite condition would have upon the fall of the glottis; to construct upon these data a scheme which graphically translates the mechanical trouble, and to deduce from this deformity of image the vocal or respiratory disorder which could functionally result from it. This method then has no other basis than an analysis pushed to excess of the muscular mechanics of the larynx; it neither takes into account the nervous physiology of the apparatus nor the reality of clinical facts.

For this somewhat conventional division, against which I have many times protested, I propose to substitute a nomenclature more simple and certainly more in conformity with observation; it is founded on the analysis of the two normal functions of the glottis and on the comparative anatomical independence of the portions of the nervous apparatus which govern each of them.

The larynx presents, we know, two methods of activity, vocal and respiratory, but each of these two functions possesses different centres, conditions in part independent, in fact, one might almost say two distinct nervous apparatus, and it is not astonishing that these two apparatus, and consequently the two functions that they control, should be often affected singly by morbid alterations.

This dissociation of motor troubles is not merely the only one which is physiologically legitimate—it is the only one verified by facts. We have, then, only to determine the disorders which deviations in one sense or the other of these two modes of physiological activity may produce—in one word, to establish for each of these morbid conditions its laryngoscopic formula and its functional formula.

To lend themselves to the double *rôle* which the larynx must accomplish, the vocal cords take, turn by turn, two opposite attitudes—the one complete abduction, the other extreme adduction, one side and the other from the neutral line which answers to the cadaveric state, and which is their position of inertia. To each of these two attitudes there answers one of two opposite nervous forces, of which one has its origin in the bulb, the other in the cerebral cortex. The regular function of this double mechanism is then intimately bound to the integrity of the two forces which produce this to and fro movement of the cords. In order that these pass freely from one to the other from their two contrary positions, it is not sufficient that the power which produces their displacement may be functionally intact; it is necessary besides that the opposing force may give way when the other is exerted, so as not to impede the movement; so this may be hindered either by default of action of one of these forces (paralysis) or by untimely and continuous action of the other (contraction). The result in both cases will be exactly the same—immobilization of the cords in the position in which

they are fixed by the predominant force. Partial systematic lesions of the nervous apparatus of the larynx can therefore realize only two kinds of malformations of the glottis—permanent adduction from contraction of the adductors or paralysis of the abductors, or permanent abduction, which is produced in opposite conditions. If one adds to these two forms the position of cadaveric inertia—it is realized by total paralysis—we see that the troubles of innervation of the larynx are reduced in reality, save for some rare conditions, to the fixation of the cords in one of their three normal attitudes. That which makes an anomaly is not the form of the glottis, but the fixity of this form, and the impossibility, when the cord is affected, of quitting at any moment the situation in which it is fixed. Such are the three morbid aspects of which it is appropriate to study separately the mechanism, the laryngoscopic appearance, and the functional consequences.

PERMANENT ADDUCTION.—This is the most important from its gravity, its frequency, and the discussions which it has provoked.

Mechanism.—It is not yet determined what part ought to be assigned in its pathogeny to paralysis and contraction, neither if one of these two mechanisms ought to be entirely rejected in favour of the other; theoretically, both are possible, and we can equally well imagine the cords maintained in the median position by adductor contraction, or abandoned in this attitude by abductor paralysis.

Laryngoscopic formula.—Malformation dissimulated in the vocal phase (since the action of the adductor is intact or exaggerated), manifest in the respiratory phase; it is made evident in this case by the narrowing of the orifice, which narrowing is exaggerated in large inspirations to complete occlusion.

Functional consequences.—*Nil* in phonation. Respiratory symptoms consist oftenest in habitual dyspnoea with paroxysmal attacks provoked upon effort which augments the respiratory activity.

Unilateral form.—In phonation the same aspect as the bi-lateral form. In the respiratory phase the glottis closed on the affected side is opened freely on the healthy side, dyspnoic phenomena being more or less completely absent.

PERMANENT ABDUCTION.—The vocal affection par excellence, less grave than the preceding, which affects the larynx in its vital function.

Mechanism.—Two modes of production inverse and in some manner symmetrical to those of the preceding form. Paralysis of the adductors, or contraction of the abductors. Origin is often functional (hysteria) or due to a lesion of the brain (cortical hemiplegia).

Laryngoscopic formula.—Latent in the respiratory phase (since abduction is here preserved or even excessive), the malformation is apparent only in vocal effort, during which the cords are seen to be maintained obstinately in respiratory abduction (hysterical aphonia).

Functional consequences.—Total aphonia; no respiratory trouble.

Unilateral form.—Same aspect in respiration as the bilateral form, phonatory compensation impossible, because of the extreme abduction of the affected cord, which the healthy cord cannot succeed in reaching.

CADAVERIC POSITION.—Contrary to the preceding, this affects simul-

taneously both functions, in consequence of the position of the cords, which, this time, are neither in the vocal nor respiratory position ; but in consequence of this intermediate situation the disorders are less complete and more easily compensated in the unilateral form.

Mechanism.—One only. Total paralysis of all the muscles of the larynx, that is to say, lesions destructive of the pneumo-gastric, or the recurrent in the region of their course, where these trunks contain all the motor nerves of the larynx (from the anastomosis of the spinal accessory to the terminal ramification of the recurrent).

Laryngoscopic formula.—Glottis fixed in both phases in an attitude of inertia, forming a narrow triangle, the posterior base of which does not exceed five millimetres, cords wavy and relaxed (want of tension), atrophied and shortened (lowering of the arytenoid), which is allowed by the posterior crico-arytenoid to project forwards.

Physiological consequences.—Respiratory affection moderate, aphonia complete in the bilateral form.

Unilateral form.—Compensation in both phases by the movements of the healthy cord. In respiration, a symmetrical glottis, half opened on the affected side, entirely on the healthy side. In phonation, compensatory excursion of the healthy side, which passes over the median line, and more or less exactly meets the immovable cord ; glottis closed, but oblique. Defective tension of the affected cord however persists, which nothing can compensate ; consequently there is disaccord between the vibrations of the two cords (bi-tonal voice).

This classification has already met with two objections. It has been reproached with being only a physiological reverie, where observation counts for nothing, and again as containing nothing new, and being only a schematic translation of the nomenclature of clinicians. The second of these objections is, I believe, the very best answer which could be made to the first. So, starting from a totally different point of view, my argument has met with the results of the clinic, and perhaps this argument is less theoretical than one is pleased to pretend ; and in fact, the morbid forms to which reasoning has led me differ but little from those to which the examination of the patients has led clinicians. I find these forms, in part, in the divisions which Ruault, in the "*Traité de Médecine*," has established on the data of laryngoscopic observation. I find them more clearly yet in the nomenclature of Gottstein, but nowhere so completely as in the division of the old clinicians into vocal, respiratory, and total paralysis. It is to this traditional classification that theory has led me, and the scheme which I have traced is only the rational interpretation of this primitive nomenclature ; but if my scheme resembles, in its conclusions the classical nomenclatures, it differs entirely from them by the means at which it is arrived, and it is for its principle that it deserves the originality which I contend for it. While the old classifications were based only on observation of the patient, or on the analysis of the muscular mechanics of the glottis, the method of classification which I propose starts from a different point of view. It is founded exclusively on the nervous physiology of the larynx, on the two methods of activity which I have formerly distinguished ("*Archives de Physiologie*," 1892)

in the function of this organ, and on the independence of the centres, and of the nervous trunk which govern this double activity.

All my argument is contained in this notion of nervous physio-pathology, and the classification which I deduce from it is made by it and for it; it is this idea which I believe to be new, and which does not exist, so far as I know, in any of the older nomenclatures.

VACHER : Motor disorders of the glottis do not always have as a cause a material lesion of the nervous system, there is a whole series of troubles which are purely dynamic and which pathological anatomy is unable to explain, such as hysterical aphonia, chorea, etc.

CARTAZ : There is no difficulty in understanding the incompleteness of our documents upon the pathological anatomy of the laryngeal centres when we think of the special difficulties which such observations present. In most cases the alterations are not limited merely to the regions of these centres, but there are complex anatomical lesions, in which it is always very difficult to isolate the element which has determined the laryngeal trouble during life. The only observations truly demonstrative are those in which the laryngeal affections are observed more or less free from all foreign elements. The cases of Garel and Déjerine from this point of view have an exceptional value. As to the question of paralysis of the abductors, Raugé seems inclined to side himself with the advocates of contraction. There, however, exist incontestable cases where the nervous filaments of the abductors and the abductor muscles themselves have been found alone degenerated.

RAUGÉ : Cartaz is right in insisting upon the great rarity of observations relative to diverse lesions of the laryngeal centre. Almost all those formerly published are in some sense incomplete; some are *post mortem* observations without laryngoscopic examination, others are cases without autopsies. The only facts which can be used are those in which the examination of the patient has been rigorously practised during life, and followed by complete autopsy, including not only the brain but the whole nervous apparatus of the larynx. I am far from admitting in any exclusive fashion the doctrine of contraction. I believe that the glottic closure, which some wish to attribute constantly to the paralysis of dilators, whilst others see always the phenomenon of contraction, can be explained, according to the case, as one or other of these mechanisms, that is why I have cautiously kept in the preceding nomenclature the designation permanent adduction which does not prejudice the nature of the phenomenon.

HELME : What difference does Raugé make between permanent adduction and paralysis of the abductors?

RAUGÉ : The term paralysis of the abductors has the fault of affirming, in order to interpret the trouble observed, a physio-pathological mechanism of which nothing proves the exactitude. It is an unfortunate term, in all cases contestable; that of permanent adduction, which is only the definition of a laryngoscopic appearance, is applied, on the contrary, to all cases, whether of paralysis or contraction. One will never, therefore, risk being mistaken from the employment of this term in a case where the vocal cords are abnormally fixed in their phonatory position.

As to determining whether this adduction is paralysis of the abductors or spasms of the antagonists, that is a question always delicate, but which may be generally resolved by an attentive laryngoscopical examination; the relaxation of the cord in the case of paralysis, its shortening produced by the falling forward of the arytenoid, its floating and excavated appearance, are sufficient to enable one to refer the clinical appearance to its true mechanism.

MOURE: We cannot at present be absolutely certain of the situation, or even of the existence of the laryngeal cortical centre. Though this nucleus is rendered very probable by physiological reasoning, it is necessary that it should be demonstrated in a peremptory fashion, by clinical observation and researches on the cadaver. There are, in the question of cerebral localisation, facts which have been definitely acquired, and others which still remain problematical. The question of the laryngeal centre is amongst this latter doubtful class, as Prof. Pitres has recently declared to me. As to the nature of the malformations produced by the lesions of this nucleus, we possess too few facts to establish them in any absolute fashion. Certain authors declare that they have seen, in such cases, the glottis in a cadaveric position; these are facts of observation which we must accept for the moment, and shall have to interpret later their apparent contradiction of physiological reasoning.

RAUGÉ: Lesions of the cortical centre can affect the larynx only in its vocal functions. They leave absolutely intact the movement of respiratory abduction, which depends upon the bulbar centre. It is, therefore, physiologically impossible that alterations limited to the cortex should be expressed by the cadaveric position, which answers to the complete suppression of all glottic activity.

FERRAS. *Laryngeal Hæmorrhage simulating Hæmoptysis.*

The author related a case of a girl, aged twenty, of robust constitution and full health, who very often submitted her larynx to violent and continued exercise in working in the garden, she having exchanged a town life for that of the country. Her health soon failed; she became pale, thin, amenorrhœic, sad, and sang less often. There was neither dysphonia nor aphonia. Coughing attacks occurred, and she spat blood—first a little, then a larger quantity, lasting all the morning, and amounting to about half a wineglassful. With absolute rest the hæmorrhage ceased. Being afraid of phthisis, she came next day to consult the author, who found no trace of epistaxis or of hæmorrhage from the throat or pharynx, or of disease in the lung, but in the larynx the mirror revealed the presence in the postero-superior portion of the inter-arytenoid space of two little veins anastomosing at obtuse angles. A part of the most prominent vein near the base of the right arytenoid presented a slight tear closed by an inter-venous clot. The laryngeal mucous membrane was injected generally a little less over the vocal cords. In no other part was there any trace of hæmorrhage. The author thinks the case interesting, having no knowledge of other cases where the seat of the hæmorrhage has been so clearly defined. Very often, as in this case, where amenorrhœa has been noticed, it is a woman who has been the

subject of the observation, which is confirmed by the remarks of Beyer, Moure, Stepanow and Poyet. This case well shows the value of the laryngoscope in general medicine.

CARTAZ. *Laryngeal Affections in Syringomyelia.*

The author relates the results of laryngeal examination practised on seventeen patients in the clinics of Drs. Raymond, Déjérine, Duflocq and Marie. The frequency of bulbar manifestations in syringomyelia has been noted, and certain authors have described these manifestations as one form in part under the name of the bulbo-protuberant form. Cartaz has studied only the sensory and motor disorders of the larynx and pharynx, leaving on one side the multiple affections of the trigeminal, the hypoglossal and the ocular nerves.

Schlesinger has published a note on twelve cases, and has shown that in a number of cases the disorders remained unperceived, and that they may be more frequent than is supposed. Of the seventeen cases examined there was a sensory or motor modification in nearly half; four times abolition of reflexes, seven times paræsthesia or anæsthesia, five times paralysis of one vocal cord; paralysis of the posterior crico-arytenoid in three cases, once with most distinct atrophy of the vocal cord, once of the paralysis of the recurrent. Sensory affections are more frequent than motor. They occur, however, independently of each other, corresponding generally to the side most affected, without, however, following any constant rule. In some cases anæsthesia of the palate is complete when the syringomyelic manifestations are rather unilateral. In the larynx the motor troubles are characterized by more or less complete paralyses (they have been found to be bilateral); but there have not been observed, as in tabes, spasmodic attacks leading to ictus or suffocation. The onset of these accidents is insidious, occurring generally when the disease is already accentuated, although in one of the cases cited by Cartaz it was evident from the origin of the disease. The course is progressive and fatal. These accidents are not always the appanage of syringo-melias of old date; you will find them sometimes in cases of patients quite recently affected, while others, helpless from the disease for long years, have no marked lesion of the superior respiratory passages.

CASTEX had examined the larynx of a patient affected by paralysis agitans. The voice was tremulous, though no trembling of the cords was seen with the laryngoscope; they were only soft and flaccid.

CARTAZ had also observed two cases of paralysis agitans with a tremulous voice, but had distinctly seen fibrilear movements of the cords in both cases.

WAGNIER. *A case of Tracheal Ozæna.*

A girl of sixteen years of age, in 1893, began to experience fœtidity of breath. She had true nasal ozæna, with crusts in the nose and nasopharynx. Later on, after a cold, crusts were observed in the larynx, and the fœtidity of breath was no longer cured by nasal washes. Viscous masses were removed from the trachea, and the odour was overpowering, the nose being kept free by irrigations. Intra-tracheal injections of oily and aqueous solutions were only partially successful.

Bacteriological examinations showed the presence in the crusts of two kinds of diplococci, one of which was stained by Gramm's method, liquefied gelatine, and produced foetid cultures. The other diplococcus resembled Lœwenberg's microbe of ozœna.

MOLINIÉ had met with Lœwenberg's coccus in a case where there was no foetidity, and doubted if his conclusions could be applied to all cases.

BEAUSOLEIL. *Secondary Hæmorrhage consecutive to Ablation of Adenoid Vegetations.*

These hæmorrhages occurring some days after operation are very rare according to published literature. The author reports the case of a girl of fifteen, in whom he used Gottstein's curette for the removal of adenoids, which were hard and voluminous, and traversed by numerous vessels on the surface, some of which appeared to be dilated. Eight days after the operation there was abundant hæmorrhage through the nostrils and mouth, persisting for eleven hours, and finally arrested by irrigation of perchloride of iron. This left the patient enfeebled, and the least movement threatened syncope. The bleeding recurred, though more slightly the two succeeding nights. The case resembles those reported by Segond and Lacoarret.

As to the cause of these secondary hæmorrhages, the author thinks that age plays the most important part, all these patients having gone beyond the most favourable age for operation, *i.e.*, five or six. With increased age there is fibrosis of the growths involving the blood vessels, and when the clot or scar closing their wounds falls, there is hæmorrhage. The author also insists upon the importance of a varicose condition of the naso-pharynx, sometimes found in the production of abundant hæmorrhage.

CASTEX thought that the danger of secondary hæmorrhage was lessened by using hot antiseptic irrigations, prolonged for several days before operation, removing any adenoiditis.

CARTAZ was surprised to hear of such methods before operation, for it is useless to operate if the liquid passes through the nose, and if it does not, then the naso-pharynx is not cleansed, moreover, there is danger to the Eustachian tubes. Besides adenitis and hæmophilia, dilated veinules in the naso-pharynx were a cause

WAGNIER: Hæmorrhages are due to the use of cutting instruments, and he preferred the hot or cold snare, and forceps that tear but do not cut. He is of opinion that the nose is irrigated too much, leading to hypertrophic rhinitis.

HELME had seen three cases of secondary hæmorrhage, and in all three cases a small triangular osseous crust had been removed with the curette. The anomaly may have been a vestige of a septum prolonged backwards, or an exaggerated pharyngeal tubercle.

BEAUSOLEIL did not believe that the cause of secondary hæmorrhages was to be found in cutting instruments, or due to the section of a portion of mucous membrane, but it was to be explained by the nature of the growth, and varicose dilatation of the vessels of the naso-pharynx. He had also observed the crusts referred to by Helme.

CARTAZ. *Two cases of Lymphadenoma of the Tonsil.*

One occurred in a man, aged sixty, who presented pain on deglutition, and slight hoarseness, slight loss of flesh and strength, and enormous hypertrophy of both tonsils. The lingual tonsil was also enlarged, also the submaxillary glands. There was no enlargement of the spleen, but other glands were large and hard. A portion of the left tonsil removed with a snare, presented the microscopical appearance of lymphadenoma. The blood was markedly leucocytotic, and the patient had frequent insomnia and incessant agitation.

In consequence of old syphilis, specific treatment was given, but without effect. The patient was then put upon increasing doses of Fowler's liquid. The tonsils diminished a little, and deglutition was more easy. Four months after there was marked improvement, the tonsils being much less. The treatment was kept up for two years, when the patient died of cachexia, hypertrophy of the mesenteric glands having occurred, all the others, along with the tonsils, having remained stationary.

The second case was that of a woman, aged sixty, who had pronounced enlargement of the left tonsil, painful deglutition, and dyspnoea. The right tonsil became affected. Scarifications and slight cauterisations of the tonsils performed at first left ulcers, which lasted for some months, but which were nearly cured by treatment with arseniate of soda. She got severe crises of spasmodic dyspnoea, and painful deglutition increased—the swallowing of a few drops of liquid threatening suffocation. She also had insomnia. Both tonsils were enormous, and of soft consistence, with indurated patches. There was enormous cervical and submaxillary adenopathy, especially of the left side. The spleen was hypertrophied. By reason of impending asphyxia, the tonsils had to be removed a few days later. Immediate relief followed to the respiration and swallowing, but the patient died of cachexia five weeks later, the cervical adenopathy having become enormous.

The author thinks that the early bilateral enlargement of the tonsils indicates lymphadenoma, and remarks upon the persistent insomnias of these patients. Arsenical treatment is the only one which has given satisfactory results in these cases, arresting the march of the disease. No surgical operation is justifiable, as it is only a local manifestation of a general disease. Partial ablation may be necessary for the relief of obstruction.

BEAUSOLEIL had presented to the Anatomical Society of Bordeaux a case of tonsillar lymphadenoma. After removal of a fragment of the tumour grave accidents followed by reason of the rapid growth of the tumour. The patient underwent more serious operation, and died shortly afterwards.

RAOULT. *Inflammations of the Lingual Tonsil of Dental and Buccal Origin.*

The author has been surprised at the frequency of these affections in patients with lingual adenitis; of 120 cases, he has noted dental and buccal lesions in 35. The removal of carious teeth, and rigorous care of the mouth, causes the pain on deglutition to cease. In 12 cases the

author found that the buccal or dental cause was the only one ; in 23 cases it was superadded to naso-pharyngeal trouble. The lesions of the lingual tonsil, redness and swelling, may persist long after the cause of infection has been removed. Antiseptic mouth washes, and applications of tincture of iodine to the gums are the measures indicated. The carious teeth are removed some days later, and the base of the tongue is swabbed with menthol in oil. Cauterisation of the lingual tonsil has been required in only 10 of the 35 cases. The author thinks it is necessary to examine the state of the mouth and teeth in all patients who complain of symptoms which point to a lesion of the fourth tonsil.

(To be continued.)

BERLIN LARYNGOLOGICAL SOCIETY.

April 20th, 1895.

KUTTNER showed a patient who had had a severe cold for ten to twelve days. For twenty-four hours she could swallow no solids, and fluids returned through the nose. Mucous membrane anæmic ; the velum palati and the muscles of the posterior pharyngeal wall parietic ; sensation intact ; the left half of the larynx fixed ; the left vocal process remains in the cadaveric position. For three days the patient could swallow nothing. On the fourth, fluids were taken ; on the seventh a few solids, and on the sixteenth day from the beginning the swallowing was normal. Mobility returned slowly in the larynx. Firstly, short spasmodic movements of the cord to the midline, and back to the cadaveric position, showed themselves. This condition is still present. It may be a post-influenzal neurosis. Kuttner had seen three cases of recurrent paralysis recover. These showed first choræiform movements of the cords ; then adduction and abduction from the cadaveric position to full function of the posticus.

ROSENBERG had seen two cases of recovery in recurrent paralysis.

P. HEYMANN showed (1) a specimen of a laryngo-carcinoma which had destroyed the inner half of the larynx, invading the pharynx by the ary-epiglottidean fold, and then destroying the base of the tongue and the cartilage. (2) A patient, seventy-one years old, with cervical lordosis. The spine of the third or fourth cervical vertebra was absent.

AHRONSON. *Foreign Bodies in the Upper Air-Passages.*

1. A patient, who some time previously had drawn a piece of bone into the air-passages, had a severe left-sided catarrh, with muco-purulent secretion ; the discharge often offensive. He was sent to Ems, where, after lung gymnastics and inhalations, the bone was expectorated.

2. A patient, aged thirty-five, muco-purulent, and sometimes bloody expectoration, of three years' standing. The lungs were normal. Subsequently a piece of chalk was expectorated, which probably had lodged in the trachea beneath the glottis. The dyspnœa disappeared.

3. Momentary inhalation of a pin.
4. Wounds of the oral surface of the epiglottis from swallowing fish-bones.

B. FRAENKEL thought that chalky concretions were not rare in the lungs.

LUBLINSKI.—*On Paralysis of the Upper Air-Passages from Infectious Diseases.*

The author had seen six cases of laryngeal paralysis after typhoid. Four cases occurred in men, and two in women, and the ages were between sixteen and thirty-nine years. The first symptom usually showed itself after defecescence, once first in the fourth week; once pleuro-pneumonia was the origin. Material lesions of the nerves are seldom observed in those of paralysis of the soft palate. Paralysis of the cubital nerve and paraplegia coexist, so one must assume that it is a peripheral neuritis or an anterior polio myelitis. In the slighter cases spontaneous recovery occurred; in some only improvement. Two cases were fatal—one subsequent to pleuro-pneumonia, the other from the severity of the typhoid. A bilateral paralysis of the posticus gave *quoad sanctionem* the worst prognosis.

Lublinski observed twice abductor paralysis in typhoid, thrice paralysis of one recurrent; once of both recurrences. The first cases required tracheotomy for relief. Differential diagnosis is to be made from perichondritis of the cricoid and ankylosis of the crico-arytenoid joint. After the antitoxin treatment of diphtheria, paralyses of the vocal cords, of accommodation, of the ocular muscles and of the lower extremities, appear fairly frequently and equally on both sides. It seems to Lublinski that the occurrence of paralysis is more frequent since antitoxin treatment than formerly. Also paralysis of the vocal cords is noticed after influenza. Lublinski observed one case of paralysis of the left posticus which recovered in the fourth week.

May 25th, 1895.

EDMUND MEYER showed a case of tuberculosis of the hard palate; tubercle bacilli had been demonstrated in the pus.

FLATAU showed a boy, aged three years, with adenoid vegetations and hypertrophied tonsils, who had at the extremity of a long, broad uvula a papilloma, which on microscopical examination showed typical adenoid tissue; aberrant tonsil.

(2) A seamstress, of twenty-three, who was seized with sudden and severe pain over the antrum. By operation, two separate collections of pus were found, one in the alveolus, and one sub-orbital, whilst the antrum was fairly free. Transillumination had given negative results in this case.

B. FRAENKEL exhibited (1) a man of fifty-eight, with a button-shaped swelling in the nasal vestibule, of rapid growth, which had bled spontaneously. When examined with a probe the tumour, inserted in the ala nasi, began to bleed. Microscopically were found connective tissue with

an enormous number of dilated blood vessels; the tumour was covered with squamous epithelium. (2) A foreign body of several years duration, which was seen in the left lower meatus of the nose; it had the appearance of bone. It consisted of a hard layer, with a soft centre.

SCHOTZ asked if it was not connected with a tooth.

A. ROSENBERG showed a case previously reported by Schedwulst, diagnosed after a long time, as aortic aneurism; the signs of recurrent paralysis supervened.

ALEXANDER exhibited a case of bleeding nasal polypus.

KUTTNER reported a case of a septal polypus the size of a cherry stone, which had not bled, and which microscopically tallied with Fraenkel's case. He observed later three granulations of the tip of the nose, which also had never bled.

28th June, 1895.

KIRSTEIN described an *Electric Forchcad Lamp for Rhinoscopy*.

BERLINER showed coloured *Models of Different Diseases of the Larynx*.

P. HEYMANN spoke on *the Fibres of the Vocal Cords*. These run parallel at the edge, reaching to and dividing at the anterior commissure. At the vocal processes they have a different arrangement.

BEUDA had by means of maceration in a five per cent. solution of acetic acid removed the epithelium of the vocal cords, and demonstrated in the specimens presented, that the fibres are seen, some parallel, some dividing, and in front and behind gradually blending in the strata. A stellate formation of fibres at the vocal process is probably to protect the epithelium against mechanical thickening. In apes there are no fibres; in dogs, slight indication; in the newborn, none.

GRABOWER hoped, from further investigation of the fibres, elucidation of the course of changes, especially in relation to carcinoma.

B. FRAENKEL claimed priority in this matter. Every part of the vocal cords is characterized in a measure by the arrangement of the fibres. In consequence of increased fibrous tissue and thickened epithelium, an instantaneous alteration to pachydermia results. The carcinoma buds are destructive to the fibres; they form atypical buds.

P. HEYMANN conceded full priority to Fraenkel.

BEUDA believed that the maceration method was not applicable to carcinoma and pachydermia.

B. FRAENKEL. *The Anatomical Nomenclature* in rhinology, laryngology, and otology. He proposed the acceptance of the nomenclature determined by the Anatomical Society.

FLATAU, HEYMANN, and THORNER agreed, and the proposal was adopted by the Society.

26th July, 1895.

STEINER exhibited a case of *Rhinoplasty for Lupus* treated by the method of James Israel. As the material from the forehead had been used up in a previous abortive attempt, Steiner took a six millimètre long

bony flap from the tibia, which formed good union and gave a very good result.

DRUMMOND MEYER showed a preparation of *Empyema of the Ethmoid* dilated like a bony bladder.

B. HEYMANN demonstrated *Plaster of Paris Models of Nasal Preparations*, the work of Dr. Britz Heilbrann.

B. FRAENKEL had removed by operation *A Tumour, the size of a Hazel nut*, from the right vocal cord, which exhibited myxomatous characteristics microscopically. He showed both the tumour and microscopical preparation.

SIEGEL (Britz). *On Foot and Mouth Disease*. This is an ailment affecting the whole alimentary canal from the mouth to the anus, especially affecting the large intestine, the liver, and kidneys. One not infrequently finds a rash on the skin, which stands midway between measles and scarlet fever. As the affection of the mouth frequently stands prominently in the symptoms of the illness, it becomes of laryngological interest. In the mouth one sees redness and œdema. The parts chiefly affected are the uvula, pillars of the fauces, and gums, in which scorbutic-like changes occur. The tongue is acutely swollen to a thickness of two to three centimètres. Blebs, with subsequent ulceration, are to be found in the whole mouth, pharynx, and glottis. The gums are frequently retracted, and the mucous membrane desquamating. In most cases weakness and constipation are present as general symptoms. From clinical observation and numerous sections, Siegel thinks he has found a bacterium, which is found in the excrement, and especially in the internal organs of animals. At the conclusion of the paper he exhibited cases and specimens of pure cultures, with some from animals.

EDMUND MEYER described two cases of the same disease. The first occurred in a child, who came under treatment for a prolonged affection of the oral mucosa, with weakness and constipation. Under internal cleansings with chlorate of potash the mouth quickly healed, but the constitutional symptoms persisted for a long time. The second was in a girl of twenty-one years of age. Symptoms—severe pain, which rendered taking of nourishment impossible, excessive weakness, offensive diarrhœa, tongue thickly coated, on the edges of which were extensive ulcers, also on the lips and on the left posterior faucial pillars. The gums acutely swollen, ulcerated, and covered with very thin fibrinous membrane. In both cases Siegel obtained a bacterium from the evacuations.

ROSENTHAL showed a case of *Aneurism at the Root of the Arcus Palati pharyngeus* the size of a coffee bean; pressure on the carotid stopped its pulsation. He maintained this aneurism showed a practical consequence of tonsillotomy.

B. FRAENKEL had not rarely seen pulsating vessels the size of a crow quill on the posterior wall of the pharynx. In Rosenthal's case one had the aneurism as well as abnormal pulsation to deal with. These aneurisms do not enter into the question of tonsillotomy, but aneurisms occur exactly on the site of the tonsils. *Meyer (Trans. R. LAKE.)*

Königlicher Verein der Aerzte in Budapest. Meeting, March 2, 1895.*Discussion on Serum Treatment.*

HOGYES believes that the mortality of diphtheria is so variable that up to now statistics prove no influence of Heilserum. In the experiments upon animals the minimising effect is always applied; in men, the curative effect is specially urged.

WEISS recommends serum treatment.

TANGL: If the serum has any effect the subsequent paralyses and nephritis would not be exhibited.

PERTIK, also believes that statistics up to the present do not prove the efficacy of serum, but further experiments should be performed.

PURJESZ believes that favourable statistics are obtained from the circumstance that now all the milder forms of diphtheria also come into hospital for treatment. He has observed a case under the care of Prof. Widerhofer cured by serum. Three weeks later there was recurrence. Serum treatment was given on the first day of the disease but death followed. *Michael.*

Med. Gesellschaft in Leipzig. Meeting, February 12, 1895.*Experimental Contribution to Thyroid Gland Treatment.*

FRIEDRICH: Report on some experiments made on dogs, with exact tables, but without any new results.

TILLMANN has applied the thyroid gland treatment to a myxœdematous child, three years old, with the best results.

J. A. HOFMANN prefers the tabloids to the use of the simple gland.

TAUBE relates the case of a little cretin, with very large head, who every week had two thyroid glands. The first time he became somewhat better, but then died suddenly.

FREDHEIM treated a case of scleroderma. The patient had palpitations and tachycardia, and the treatment had to be interrupted.

HOFFMANN showed the curve of the weight of a lady with great obesity, who lost weight as soon as she took thyroid gland, but increased when the use of the medicament was stopped. *Michael.*

Aerztlicher Verein in Nürnberg. Meeting, February 21, 1895.

CNOPF reported eighteen cases of diphtheria treated with local applications and injections of Heilserum; two of the patients—11 per cent.—have died. *Michael.*

Aerztlicher Verein in Hamburg. Meeting, June 11, 1895.

THOST showed a soft rubber canula for the treatment of laryngeal stenosis in children. He also showed two patients wearing this canula. *Michael.*

Wiener Laryngologische Gesellschaft. Meeting, June 7, 1895.

PANZER showed an instrument for removal of the inferior nasal turbinated body. ROTH had used a similar instrument.

CHIARI had used Panzer's instrument with the best result.

CHIARI showed a child upon whom he had performed trepanation of the frontal sinus, and had removed a necrotic piece of bone, which had produced profuse suppuration.

WEIL showed a papilloma which he had removed from the septum.

ROTH reported a case of retro-nasal phlegmon, which ended in abscess of the pharyngeal tonsil. The symptoms were the same as in a pharyngeal phlegmon. Eight days after the commencement there was discharge of pus through the nose and mouth. The patient was much relieved, and was cured in short time. The patient had often had lacunar angina.

GROSSMANN remarked that pharyngeal phlegmon is in most cases a peritonsillar abscess.

HAJEK. On suppuration of the sphenoid sinus. In a patient, forty-five years old, who had a discharge of pus from the fissura olfactoria, the author found suppuration of the sphenoid sinus. He treated it by opening the sinus and enucleation. Suppuration in this region, if not caused by local process, is always produced by sphenoidal empyema.

Michael.

Zweite Versammlung Süddeutscher Laryngologen in Heidelberg.

Meeting, June 4, 1895.

SCHMIDT (Frankfurt-a-M.). *Introductory Remarks to the Discussion upon the Diseases of the Accessory Cavities of the Nose.*

The author reviewed the situation of the question, and recommended for most cases a mild treatment without great operations, which are not without great danger.

GRÜNWALD (Munich) showed specimens, which proved that the necrotic processes of the ethmoidal region really exist in spite of the contrary views of many authors. He also showed specimens which prove how much the entrance to the cavities is revealed by removal of the anterior part of the middle turbinated bone. He recommends extensive surgical operations for the treatment of suppuration of the accessory cavities, and believes that unfavourable results are obtained if the operation does not remove all diseased parts. In one case of abscess of the frontal lobe caused by empyema of the frontal sinus he obtained complete cure by trepanation. The treatment must consist in free opening of the cavities, especially of the frontal sinus. The cavity must be filled with iodoform gauze. Then granulations will be produced and fill out the cavity. By this method all cases can be cured.

KAHN (Würzburg) showed a specimen of necrosis of the frontal sinus, and microscopical specimens of pathologically degenerated mucous membrane of the frontal sinus.

VOHSEN (Frankfurt-a-M.) recommended illumination in examination of the accessory sinuses. He also recommended the free opening of the frontal sinus in cases of empyema. He does not believe that it is possible to cure the disease through the natural channels.

SCHÉCH (Munich) believes that sensibility on pressure of the lower internal orbital wall is a valuable symptom of latent empyema of the frontal cavity.

DREYFUS (Frankfurt-a-M.) believes that meningeal diseases caused by chronic suppurations of the nose and the accessory cavities are not rare. He found increased sensibility only in two cases.

BECK (Heidelberg) described Czerny's method for opening the frontal sinus.

HELLMANN reported a case of empyema of the ethmoidal and frontal sinuses treated by enucleation. The patient died forty-four days later from meningeal symptoms. The *post-mortem* examination showed no relation between the operation and death, which was caused by meningeal apoplexy.

KAHSNITZ has cured his cases by introduction of a tube in the natural passages, and by irrigation.

KILLIAN (Freiburg-i-B.) believed that by the formation of an osseous bridge the malformation caused by the operation can be diminished.

JURASZ (Heidelberg) treats empyemata of the antrum of Highmore by Mikulicz's method, and recommends it.

GRÜNWARD (Munich): The probe only has a diagnostic value in cases of empyema of the frontal cavity. It is necessary to remove the mucous membrane and the anterior wall of the sinus. From the nature of the secretion often no certain diagnosis can be made.

PROBSTING (Wiesbaden) remarked that oedema fugax is not characteristic of empyemata of the antrum of Highmore.

WERNER (Heidelberg) has examined the secretion of the accessory cavities, and has found streptococci, staphylococci, and bacterium coli.

KLEMPERER (Strasburg) does not believe that the bacteriological examination gives any results of prognostic value in the case.

SIEBENMANN (Basle) believes that the nature of the pus sometimes can be used in forming a prognosis of the cases.

M. SCHMIDT made some concluding remarks.

SEIFFERT (Würzburg). *On Broncho-stenosis.*

See the report of the paper in the "Münchener Med. Woch."

SIEBENMANN (Basle) showed microscopic specimens of hyperkeratosis of the epithelium of the tonsil, and some instruments.

FISCHENICH (Wiesbaden). *Phlegmon of the Face, the Nose, and the Naso-Pharynx.*

The paper will be published later.

KILLIAN (Freiburg-i-B.). *Intubation Treatment in the Laryngeal and Tracheal Stenosis of Children.*

The author describes the method of intubation, not differing from the well-known descriptions of this method. Of nine cases eight have been cured, and one died from suffocation. The author recommends the method. *Michael.*

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**The OPERATIVE and DIETETIC TREATMENT of
SUPPURATION in the ACCESSORY CAVITIES of the NOSE.**

By Dr. ZIEM (Dantzie).

(Translated by A. BROWN KELLY, M.B.)

(Continued from page 738.)

2. In regard to the second objection to Cooper's method, viz., that it provides too little room, we have already mentioned that the passage can be easily widened with the dental engine to a centimètre, or even more. Older surgeons, as Roser, enlarged the opening made by means of a chisel, so that they could introduce a finger into the cavity and feel the walls. In the great majority of cases, however, so large an opening is unnecessary, and the more so, when we know from Zuckerkandl's investigations that, contrary to what was previously supposed, polypi of the antrum, which were believed to be capable of maintaining a suppuration in the cavity, occur but seldom. A more important reason why the establishment of a large opening appears to have been considered indispensable, was possibly the want of a suitable apparatus for washing the antrum. As long as only the irrigator was used, it was necessary to make a wider opening in order to admit a larger canula when it was desired to give the fluid a greater pressure. But even with a wider opening, as made in my own case, there is a considerable loss of time whenever the irrigation of the antrum is carried out by means of Weber's apparatus. Instead of enlarging the opening, we can adopt the opposite course and increase the pressure of the fluid. The india-rubber syringes fitted with a single or double ball, which were first employed for this purpose, do not give a much greater pressure than the irrigator, and when the swelling of the mucous membrane of the antrum is more marked we often fail to

force even a single drop through the sinus if the artificial opening has not been enlarged to allow the fluid to escape again ; besides, the manipulation of the india-rubber syringe is very tiring for the hand. Several years ago M. Schmidt recommended a small syringe with a fine nozzle, which is filled, introduced, and compressed, again and again, as long as the surgeon's patience and the courage and endurance of the sufferer hold out. I have had under my care those who had experienced treatment of this kind : it is to be hoped that at an early date this syringe will be found only in museums.

Mayer's force-pump, which I advocated nine years ago, was much more effective than this. There were, however, certain inconveniences associated with its use : (1) It did not give a continuous uniform stream. (2) Its construction was so primitive that sooner or later it became loose, and allowed air and water to be driven into the sinus at the same time, frequently giving rise to unpleasant sensations, and even to pain. The most suitable apparatus at the present day is that constructed by one of my patients two years ago, and recently described by me.¹ It yields a uniformly strong, uninterrupted stream, so

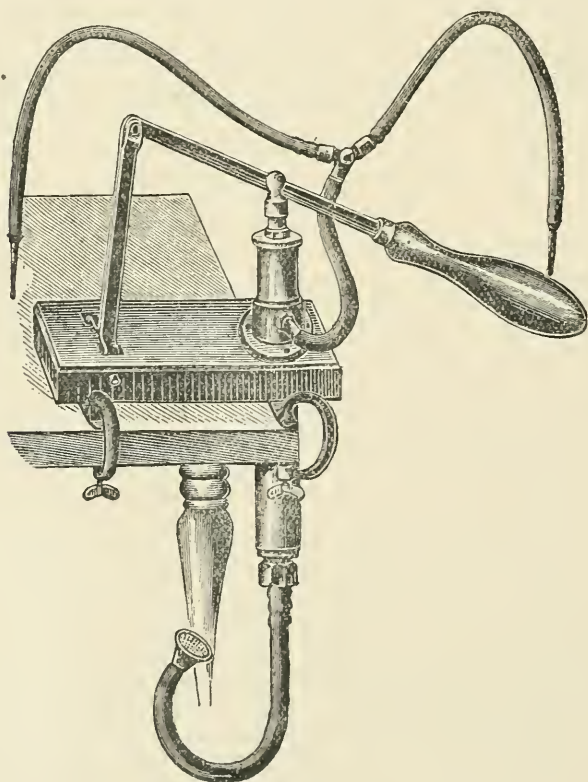


Fig. 2

¹ "Annales des Maladies de l'Oreille," March, 1895.

that the antrum, or even both antra simultaneously, can be washed without the slightest pain. The piston of the pump can be elevated fifteen centimètres, and will discharge when fitted with a nozzle of

$\frac{1}{2}$ millimetre bore	.....	1 litre of water in 5 to 6 minutes.
1	" "	..... 1 " " 2 "
2	" "	..... $1\frac{1}{2}$ " " 1 "
3	" "	..... 3 " " 1 "

On the other hand, we obtain the following results when using an irrigator of 1 litre capacity connected with a straight tube 1·10 mètres long, and fitted with a nozzle of

$\frac{1}{2}$ millimetre bore	.....	1 litre of water in 42 minutes.
1	" "	..... 1 " " 10 "
2	" "	..... 1 " " $1\frac{3}{4}$ "
3	" "	..... 1 " " $\frac{5}{5}$ "

Thus, the force-pump when discharging through an opening 3 millimètres wide sends about $2\frac{1}{2}$ times as much as the irrigator.

2	" "	" "	$3\frac{1}{2}$	" "	" "
1	" "	" "	5	" "	" "
$\frac{1}{2}$	" "	" "	7	" "	" "

I trust that these details will satisfy the gentleman who wrote the abstract in the "Annales des Maladies de l'Oreille" (1895, No. 5, p. 500), in whose opinion the force-pump has no apparent superiority over the irrigator. The importance of these points in practice is also evident from a case of fistula of the lower eyelid with antral suppuration, just communicated by H. Kœrner in Halle,¹ and from another of the same kind published by me in 1887. On trying to wash out the antrum, after having drilled into it from the alveolus of the first molar, at first no fluid escaped either by the fistula or nose; on raising the irrigator, however, to a height of two mètres, a quantity of foul pus suddenly gushed from both nose and fistula. The pump supplies a still greater pressure, and the antrum is washed out thoroughly, simply and quickly, even when the artificial opening is small. A further increase of pressure can be produced during the washing by closing with the fingers, from time to time, the corresponding side of the nose; this proceeding, contrary to the opinion I formerly held, is fraught with no danger to the ear if an air-tight apparatus be used.

I shall now say a few words regarding washes. I may remark, first, that when water is bad, especially when spring water is not at our disposal, it must be boiled. This requirement is, perhaps, not fulfilled by some authors in Berlin, who have seen the disease aggravated by washing out the antrum. According to reports which I have occasionally received from medical men, the water of Berlin is unfit even for washing the teeth and rinsing the mouth. In the second place, I have given up the addition of all disinfecting and bactericidal substances. Even borax, which formerly I employed largely, I have abandoned owing to the cardiac and

¹ "Verhandlungen der Deutschen Odontol. Gesellsch.," VII, Band, 1.

general weakness frequently induced even in robust persons by its long-continued application. I now make use of only three-fourths to one per cent. solutions of common salt or sea-salt, Tavel's solution (three-fourths per cent. salt and one-fourth per cent. soda), or weak solutions of Kreuznach salts ; the last is specially indicated in foetid suppuration. Common salt, and the chloride of magnesium in sea salt exercise a by no means inconsiderable antiseptic action ; besides, there is no fluid which is so well borne by the nasal mucous membrane as a solution of common salt. What is capable of being cured by washes can be cured by such simple liquids, and I fully agree with Krieg that chemistry will not advance us further in this matter. In washing, it is not the substance used that is of importance, but the manner and thoroughness with which it is carried out. Many agents, such as zinc, alum, infusion of marsh-mallow (according to an observation of Hyrtl), diluted milk (from my own experience), etc., injure the sense of smell. Although the enthusiasm for creolin has subsided, I would still warn specially against it, for the sake of the pump. The parts with which it comes in contact, particularly the cylinder and piston, become so slippery that the apparatus very soon ceases to act. The water must be moderately warm, as cold water causes violent pains in the cheeks and temples. It is a piece of pedantry however, to bring the water exactly to 26° R., as is done in some places ; the best guide is the patient's sensations. In order to expel the water remaining in the cavity, which produces a slight feeling of pressure, the tube is lifted out of the vessel containing the fluid after the irrigation is completed, and air is carefully and slowly pumped in ; the canula, also, is slightly withdrawn, or the metal cap removed which usually closes the double canula. Some fluid, however, always remains, and afterwards escapes while bending, lying on the back or on the opposite side.

If those authors who have expressed an unfavourable opinion regarding my method of washing the antrum through a small opening would only give it a careful trial, they would be convinced that very frequently it succeeds. Even the most severe cases, with profuse purulent, ichorous discharge, in which the smell is so offensive as to necessitate the opening of the window and the use of fumigations of juniper or a spray of carbolic during the washing, can be cured after a small opening has been made through the alveolar process. Unfortunately, I cannot give exact statistics of the results in all the cases of antral suppuration I have treated, for I have no hospital beds, and almost all have attended me as out-door patients ; consequently, in many instances, I do not possess a complete report. The following summary statement must therefore suffice :—Some cases were cured in a few days, three or more ; others, only in the course of weeks ; while others, partly for reasons still to be mentioned, remained uncured. I often learn from a third person, however, that a patient whom I treated years before is permanently cured, and that he himself consults me on this friend's recommendation. I even know of one of my former *protégés* who has been well for nine years. To-day, I heard from a gentleman whose sphenoidal sinus was drilled into four years ago in — ; shortly afterwards he came to me with very marked empyema of

both antra that had been overlooked; a cure was also effected in this case after a small opening had been made, and at the same time asthmatic attacks, which had previously been treated in various ways without success, ceased. Again, there is the case of a lady, who, a year and a half ago, had a unilateral, foul-smelling, nasal suppuration after influenza. She had lost all the teeth of the upper jaw excepting the first molar of the affected side, which alone supported her artificial set. The opening of the antrum and the introduction of a canula at the site of this tooth had been recommended in —. The patient was cured, however, in a few weeks by me, after an opening two millimètres broad had been bored immediately in front of the tooth, which was thus preserved. On the other hand, I must confess that, recently oftener than formerly, in suitable cases, I have made even at the commencement a fairly large opening in the alveolar process, which measured four millimètres or more in breadth. Under such conditions washing can be done expeditiously and with a greater stream; swelling in the region of the ostium maxillare appears more rarely or not at all; and the cure is perhaps sometimes hastened.

In many patients, especially in children with closely-set teeth, we must be satisfied, both before and afterwards, with a small opening, so long as we are averse to the extraction of a healthy tooth or the removal of a considerable part of the anterior wall of the sinus. Under all circumstances, however, Cooper's method, or my modification of it, in a very large number of cases provides sufficient room, if suitable apparatus for the after-treatment is available. The washing also in this situation, in contrast to that from the nose, is almost always painless, because (1) the nervous supply of the gum is less abundant than that of the nasal mucous membrane, and (2) the canula, which is here introduced perpendicularly, does not move so violently backwards and forwards in the passage during the injection as when passed in a horizontal direction through the nose; in addition, the weight of the tube dragging on the canula exercises painful pressure on the edges of the wound. There may be violent pain, however, even after successful operation and washing from the alveolar process, if the patient does not take sufficient care of himself by avoiding cold, alcohol, and other harmful agencies. Experience has taught me to pay attention to these matters. I shall content myself here by remarking that for some time after drilling into the antrum soldiers are unable to go on parade, a post official should not sit at an open window, and a captain cannot sail his ship. Patients who have undergone such an operation ought rather to keep their room, or, when possible, remain in a clinic where an equable temperature is maintained. Garel's favourable results are, I presume, partly due to the attention given to such details. For at least a week after the operation, patients should not go out of doors without wearing a bandage and wool over the affected cheek. Those who are unable to leave their employment should work only in closed rooms, etc. If the patient has caught a chill, then it will be necessary for him to remain in his room, or even in bed, and hot applications to the cheek, rubbing it with warm oil, blistering in the retro-lobular region,¹ and other such measures, will be indispensable.

¹ Ziem, "*Monats. für Ohrenheilk.*," 1892, No. 6.

3. The third objection to Cooper's method is also of no great importance. It is to the effect that fresh infection of the antrum is constantly taking place through the passage established between the mouth and the nose, and can, or even must, prevent healing taking place. If this really held good, then we would be able to cure an antral suppuration only by operating from the nose, and all the cures reported to have been effected from the alveolar process as well as from the zygomatic fossa and canine fossa, must have been the outcome of self-deception on the part of the observers; for the sixty or more varieties of micro-organisms found in the mouth—fortunately, not all pathogenic—must manifestly reach the sinus through an opening in the alveolar process or in the canine or zygomatic fossa, since a hermetic closure of the anterior from the posterior buccal cavity by the *ἐρκος ὀδόντων* cannot for a moment be imagined, and the contents and moisture of the mouth, laden with micro-organisms, will come into the most intimate relations with all the neighbouring communicating spaces, especially during mastication. Consequently, when a cure has been obtained by opening in the canine fossa after the failure of long-continued treatment from the alveolar process, the result is not to be attributed to the exclusion of micro-organisms or particles of food.

According to the observations of Alt and others, the operative removal of cleft palate has been followed by the cure of chronic nasal catarrh. Still, in such cases the conditions are quite different to those in force when the antrum is opened, and the washing and cleansing of the cavity is carried out once or twice daily, so that an accumulation and decomposition of the particles of food which may pass in is prevented. On the other hand, in cleft palate, such washing is not undertaken, at least not regularly, and here also there is no inherent tendency to closure, just as after opening the antrum. In addition, if separation from the buccal cavity were really so important, it is evident that the most brilliant results—much more brilliant at all events than those reported—would be obtained by introducing obturators into the artificial openings. Obturators, however, appear to give worse results than open drainage tubes; and this is easily understood, for the obturators prevent the escape of the secretion which accumulates after each washing, and which is further augmented by the irritation of the foreign body. Drainage tubes of vulcanite or metal are better; but they also act as foreign bodies, and increase the hyperæmia of the mucous membrane and the secretion. It is best, however, in spite of current opinion, not to introduce a drainage tube. For, in my own case, after the expulsion of a piece broken off a sharp spoon—which had not been applied with the precautions so ingeniously devised by Hajek for the introduction of canulæ—the moderate suppuration in my antrum entirely ceased in a short time, although no washes were then used. The drain-like foreign body in the lower wall of my antrum had delayed healing certainly for many weeks. On the other hand, after long retention of drainage tubes, Vacher has seen the antrum almost completely filled with granulations, and Hajek and other authors have observed circular necrosis of the alveolar process, and even persistence of a fistula between the antrum and mouth. Further, in a case reported by Partsch, which is only one of several similar cases, the tube was

pushed into the sinus owing to the patient's clumsiness, and not recovered until the fifth day afterwards. I myself have never used a drainage tube, nor shall I use one in future. As the temporary communication between the antral and buccal cavity is not to be feared in itself, the only point that could be adduced in favour of the tube is that by keeping the artificial opening free, it allows of the antrum being washed with the apparatus ordinarily employed. With the force-pump, however, the cavity can be well washed through a narrow opening, so that manifestly the use of the tube has become unnecessary. When the opening is wider, the patient may frequently suck by means of the tongue the accumulated secretion out of the sinus, and then rinse the mouth. Consequently, when a cure has been effected by establishing a large opening in the canine fossa, after treatment had proved unsuccessful, the following circumstances demand consideration :—

1. The dispensing with a drainage tube introduced from the alveolar process, and the consequent absence of a source of irritation.

2. The fairly profuse bleeding from the antral mucous membrane, which always takes place on making a large opening, and the beneficial influence of which is frequently apparent also after enlarging the opening in the alveolar process.

3. The possibility of carefully feeling or inspecting the sinus for the presence of a foreign body, as in the case recently described by Baratoux ; or for a partition and an enclosed purulent collection, as in a very interesting case observed by Cartaz. This is often possible, however, when there is a wide opening in the alveolar process (Roser and other surgeons), especially when the antroscope of Wagner or some such instrument is employed.

4. The clinical treatment which is always necessary in the more severe operation, namely, residence in hospital, which means improved hygienic conditions for many, especially poorer patients (see below).

5. We must partly take into consideration also the dry treatment of the mucous membrane by introduction of iodoform gauze and such like, which has only now been undertaken in some cases. This method can, of course, be practised from the alveolar process, and is even carried out in this way by several surgeons at the present day.

A large opening may be made into the sinus through the anterior wall if one is unsuccessful in treating empyema of the antrum from the alveolar process with washes, or by the dry method with iodoform gauze, due regard having been paid to the conditions which experience has shown often render the washing inefficacious, and which will be referred to immediately. The opening is best made by means of a trephine of one to one and a half centimètres diameter, fitted to a dental engine. Hitherto I have not employed the large opening, and in the five cases mentioned in 1886 I entered from the canine fossa through a narrow opening made partly with the trocar and hammer, and partly with the drill. I have made no further use of this method, however, for the following reasons :—

1. Four of these five patients became unconscious during the operation, presumably in consequence of the direct extension of the shock from the

anterior wall of the sinus to the frontal process, the cribriform plate and the brain; an accident which I have not experienced as yet in operating from the alveolar process.

2. In two cases a not inconsiderable swelling of the overlying soft tissues appeared, which, in one case, to the patient's consternation, extended to the lower eyelid and outlasted the cure by some weeks.

3. The opening made by the operation very soon became covered over, and the repeated tearing of it open, as well as the disturbance of the wound during washing, caused the patient considerable pain.

The last objection might be overcome by making a more extensive resection; still, irrigating through the larger opening possesses no advantage, while swelling of the soft tissues has also been observed in such cases by Hajek and others in spite of aseptic precautions. From investigations on a number of persons I may also add that, in the young while the superior maxilla is still undeveloped, and in the old when the alveolar arch has undergone atrophy, the operation is possible only after extensive detachment and retraction of the fold of tissue which passes across from the upper lip, if one is unwilling to extract healthy incisors from children and worn but still useful incisors from those advanced in years—besides, the request to do so would in both cases very often be refused. It is strange that this method has been attributed to O. Chiari by some writers, although it was described by Küster in 1889, and has been applied by Chiari only three times as yet. This method should be undertaken only in exceptional cases, for a very striking asymmetry of the face will frequently follow, especially in those who are still growing. Ferreri holds the opposite opinion, and after having performed the operation only six times, he wished to see it established as the routine procedure. The operation may be rendered more difficult by the thickness of the anterior wall, and I was told by a medical man of a case he had seen in which a celebrated surgeon passed very deeply into the canine fossa without finding the sinus. Another renowned surgeon eleven years ago regarded this operation as absolutely necessary in my own empyema, which was quickly cured, however, after the spontaneous discharge of a foreign body. In another case of recurring iritis which came under my observation some weeks ago, and which was caused by antral suppuration, this in turn having arisen from an abscess at the root of a tooth, the resection of the anterior wall of the sinus was likewise said to be necessary by a distinguished representative of ophthalmology who had had practical experience in the treatment of suppurations of the accessory cavities. The patient, however, was restored to health by me in a short time, without such an operation, and recovered excellent sight in the affected eye without the iridectomy which had also been pronounced indispensable.¹ No special advantage is to be expected from the treat-

¹ In Prof. Störk's book ("Die Krankheiten der Nase, des Rachens und des Kehlkopfes"—Wien: Hölder, 1895), which has appeared since the above was written, the opening of the antrum from the canine fossa is referred to at p. 81 as an exceedingly coarse and brutal method which is employed chiefly by inexperienced surgeons. The author then proceeds to state that, some years ago in Berlin, I told him that I had performed this operation a hundred and fifty times. This statement is to me perfectly incomprehensible, for I am neither acquainted with Prof. Störk nor have I ever had any written or verbal communication with him upon this subject.

ment recently advocated by some authors, of combining a wide opening in the canine fossa with another in the inferior meatus. It should be our endeavour to interfere as little as possible with the bony framework of the face, in order to avoid subsequent disfigurement. Under favourable conditions as to space, and keeping in view the analogous procedure in suppuration of the frontal sinus just described by Czerny, we should rather consider the advisability of making an occasional osteo-plastic resection of the anterior wall of the antrum; the flap of periosteum and bone would be replaced after thorough inspection and cleansing, and, when necessary, localized curetting of the mucous membrane of the sinus. In recent inflammation of the antrum, however, especially in the course of influenza, curetting is not to be recommended, and in general it should not be rashly undertaken. A preliminary inspection of the cavity should always be made by means of the instrument of Wagner, or Cartaz, or some such apparatus, to enable us to localize the parts to be treated, and thus limit our proceedings as much as possible. The scraping out of the entire lining membrane, as advised by some authors, might cause extensive necrosis, and perhaps even circulatory disturbances in the eye.

The frequent failure to heal, even after resection of the anterior wall of the sinus and plugging with iodoform gauze—measures which have been extolled by various authors and especially by Moure—clearly indicates that it is not merely the defective treatment by syringing, as alleged, that delays the cure. In spite of the opinion held by many writers, particularly by Garel, that nothing is yet known as to the causes of an unsuccessful result, the following conditions may, nevertheless, be regarded as prejudicial:—

1. Diseases of the teeth that have escaped notice.
2. Damp, musty dwellings, and impure air generally.
3. Action of alcohol and tobacco.
4. Catching cold.

1. In every purulent catarrh of the antrum, first of all, the condition of the teeth in the corresponding half of the upper jaw must be examined with the greatest care. The importance of this examination is still insufficiently appreciated, and calls for a somewhat more explicit statement as to the significance of dental disease in the etiology of antral suppuration. The attempt that has lately been made in various quarters to underrate the rôle played by diseases of the teeth can only be attributed to inadequate experience. One author, writing recently, has expressed himself as follows: "So much weight has been attached to the dental origin of antral suppurations that one feared to set it aside even when all the teeth had been lost and the alveolar process had begun to atrophy." This remark, of course, is quite irrelevant; for a suppuration originated by a dental affection and then aggravated by some condition can persist even in an edentulous jaw, unless an antrum is accidentally opened during the extraction of the teeth, so that the pus is allowed to escape. Those who have been accustomed to remove the carious teeth of patients with nasal disease, or to be present when they were extracted by dentists, will often have found at the end of the root an abscess which

has been the starting point of the suppuration in the sinus. There are certainly cases—and I also have had experience of them—in which an antral suppuration has been treated for weeks and months without success. Finally, a carious stump, usually that of the last molar, is discovered by another surgeon, or by a dentist while making a careful examination by the aid of a mirror introduced into the mouth, and soon after the removal of the decayed tooth the suppuration in the sinus ceases. Such cases occur chiefly in the practice of those who open and wash the cavity from the nose. In this respect Garel's statistics are rather striking, for so little mention is made of the extraction of diseased teeth, although the author considers the dental origin of antral suppuration much the commoner. As already indicated, the extraction of a diseased tooth, which at the same time establishes a passage into the sinus, may in itself be sufficient to cure an empyema. Thus, a few months ago, a lady consulted me on account of a unilateral nasal suppuration. I extracted the second molar, which was carious, and at the same time opened into the sinus unintentionally; although the cavity was not washed out, the suppuration in the nose had almost entirely disappeared by the following day. Several weeks later, a passage was made into the antrum through the alveolus, which had closed in the meantime; no pus was found, however, on syringing out the cavity.

More rarely a suppuration in the sinus is maintained by a bicuspid or canine, and still more rarely by an incisor, as in a case observed by M. Schmidt. In 1892 I submitted to Dr. Lichtwitz the statistics of a series of one hundred cases of purulent disease of the antrum. In eighty-four per cent. of these I found caries, stopped teeth, or no teeth, and only in sixteen per cent. a perfectly intact set, the soundness of the third molar being especially noted. In statistics published in 1888, on the other hand, when the examination was not made so carefully with the mirror, I mentioned that I had found what I considered to be a perfect set of teeth in forty-four per cent. It certainly cannot be affirmed that the antral suppuration originated in all these cases from dental caries. The percentage of this relation could be determined only by very careful and tedious anatomical investigations. It would be necessary to make sections of the whole upper jaw after it had been frozen, so that microscopical examination would in each case reveal the path followed by the suppuration in passing from a tooth to the sinus. This proceeding, if practicable at all, could be carried out only where a very large number of corpses was available. But if a direct connection does not exist between antral suppuration and dental caries, the presence of diseased teeth will, in many cases, render the patient more liable to suppuration in the sinus. The latter condition may be brought about by an external infectious agent, as in certain epidemic diseases, the virus of which enters by the nose. This has been especially observed in influenza, which, in recent years, has so often given rise to antral suppuration. We must remember:—1. That according to the experiments of Jolyet and Laffont, as well as of Prévost and Aschenbrandt, irritation of the sphenopalatine ganglion, and of the superior maxillary nerve, produces hyperæmia of the palatal and nasal mucous membrane of the gums, lips, and cheeks, also

secretion of mucus and increased temperature in the nose. 2. That in consequence of the exceedingly rich nerve supply of the alveolar wall, the stretching and tearing it undergoes in inflammation of the root cause a reflex dilatation of the neighbouring vascular area of the nasal mucosa, cheek, etc., and the infectious factor settles more easily upon the soil prepared by the circulatory disturbance. In a case lately published by F. Semon, which is of special interest in this connection, one antrum became inflamed after influenza, and on the same side, and on that side only, there was caries of a bicuspid. In this way it is easily explained how the antra are attacked by infectious diseases more frequently than the other accessory cavities; while, on the other hand, the mode of implication of the latter, which have no relation with the teeth, is also quite evident. Some have tried to account for this predisposition by the high situation of the antral orifice, which is believed to prevent accumulated secretion from escaping easily. The following facts, however, disprove this view:—

- (1) The escape from the antrum of fluid which has been injected through a small opening in the alveolar process or of pus—
(a) on bending the head forward; (b) on lying on the opposite side; (c) on lying on the back or bending the head backward—a phenomenon, therefore, which is not confined to suppuration of the frontal sinus, as in one of Luc's cases.
- (2) The sphenoidal sinus, which resembles the antrum in having its ostium situated above the floor, is affected considerably less often than the antrum.
- (3) Suppuration could not take place in the frontal and ethmoidal sinuses, which open downwards, if such mechanical factors were in force.
- (4) The frequency with which only one antrum is involved, when it can hardly be assumed that the ostia are situated at unequal heights on the two sides.

These considerations also point to the importance of diseases of the teeth, and in many cases carious or filled molars and bicuspids must be removed before an improvement in the sinusitis can set in. It sometimes occurs that a harmless and serviceable stump is extracted—still, that cannot be avoided, even by the use of the greatly over valued transillumination of the teeth, by means of which the presence of circumscribed inflammation in the dental substance is said to have been proved or excluded.

2. The next important factor which often prevents the cessation of a suppuration is the influence of air containing infectious germs and irritating materials. An unhealthy, damp, musty, or smoky dwelling is, therefore, detrimental to an extent still greatly under-estimated in practice, even by specialists for diseases of the nose and throat. Thus, a few years ago, in the era of tuberculin, I refused to undertake the treatment of a patient, who came to me suffering from lupus of the external nose and suppuration in the nasal and antral cavities, until she removed from her damp abode, down the walls of which the water ran in winter. Whilst occupying the damp house she was treated elsewhere, and tuberculin was

injected, but without success. For a considerable time I have declined to treat persons with nasal suppuration when they were not in a position and willing to live in a healthy house, and I have advised them to go into a public hospital, where, with better hygienic conditions, a temporary amelioration at least, sometimes even without operation, could be obtained. On the other hand, it is not uncommon to see a change of residence effect the most striking improvement in cases of suppuration in the accessory cavities, which till then had been treated in vain; this is especially true when the stay is made in a pine forest with its aromatic, resin-laden air. A sanatorium should be established in a wood in a healthy locality for persons suffering from nasal disease. The results in suppurations of the nose and its accessory cavities, in pleural empyema and similar affections, would then be much better and more rapid; and still more important, less severe operations would be necessary. In this connection we may also recall N. Pirogoff's remark, that nowhere, not even in palatial hospitals, had he obtained such good and quick results from his operations as in his country-house situated in a wood in Podolia. In the case of some patients, nothing remains but to advise them to leave marshy districts and low-lying lands (deltas of the Vistula, Danube, Rhine and Ganges, the German marshes, the neighbourhood of Wilhelmshaven, etc.), if they wish to avoid recurrences of the suppuration. The wide opening of the antrum is no protection against such influences unless the mucous membrane, the resisting power of which has been impaired by chronic catarrh and loss of the ciliated epithelium, has been entirely removed. The patients while under treatment must also avoid bad smells. In a case of exceedingly fetid antral empyema when nearly all the discharge had ceased, and when I had almost obtained a cure after two months' treatment, a relapse suddenly took place after the patient had spent a considerable part of a day in a laboratory, in which the body of a hare that had been decomposing for weeks was examined for poison. Similarly, my own empyema was greatly aggravated in 1883 while I was treating a patient suffering from an extremely foul-smelling otorrhœa. In order to protect one's self somewhat from such noxious agents, the treatment of these patients should be undertaken only beside the open window, or in winter, during fumigation with juniper or such substances. Under this category also comes the deleterious influence of badly ventilated and dusty workshops. Persons with nasal or antral suppuration working under such conditions, experience a marked diminution in the amount of discharge after holidays.

3. The use of alcohol and tobacco is also detrimental, and too little attention is paid to their effects. If a patient with an empyema which is almost cured drinks half a glass of beer or wine, the discharge may in consequence become abundant again; this corresponds to what is often enough observed under similar circumstances in blennorrhœa of the urethra. Digestive disturbances, caused by heavy meals which load the stomach, such as many people in Germany eat late in the evening, often act injuriously.

4. In addition, we have to mention catching cold. This may be

contracted by sitting at an open window while perspiring ; by making a sea voyage in stormy weather (sailors consequently, have very severe empyemas) ; by getting drenched, especially when the head gets wet (in bathing) ; by wetting, and habitual sweating of the feet (the latter condition is to be treated by foot-baths, at first lukewarm, afterwards cooler) ; and by the hair being cut too often and too closely, the bad effect of which can easily be demonstrated.

(*To be continued.*)

ON PATHOLOGICAL CHANGES IN THE LABYRINTH.

By Prof. POLITZER (Vienna).

Read before the International Congress of Otology, Florence, September, 1895.

A KNOWLEDGE of the pathological changes in the labyrinth dates scarcely further back than the second half of the present century. The cause of this hiatus in science is to be found particularly in the imperfection of the methods of microscopical examination, which has only been remedied about the time mentioned, as is shown by the fact that it was only at this date that the histological structure of the cochlea was discovered by the celebrated Italian, Prof. Corti, as also by the subsequent remarkable and well-known works of Boettcher, Moos, Steinbrügge, Habermann, etc. Further, other difficulties, such as the inability to perform autopsies sufficiently early, and insufficient observation of labyrinthine affections during life, have up to the present prevented us from establishing the anatomical conditions of labyrinthine pathology. Their knowledge will only acquire great value when we shall be able to compare them with the clinical phenomena which they produce. Unfortunately, we have before us only a very small number of anatomical demonstrations on individuals submitted to clinical observation during life.

The pathological changes in the labyrinth comprise—

- 1st. Hyperæmia.
- 2nd. Hæmorrhagic extravasations into the labyrinth.
- 3rd. Inflammations of the labyrinth, both primary and secondary, with their results.

I. *Hyperæmia*.—Easy to observe anatomically, hyperæmia of this part has its practical importance from a clinical point of view, because it may give rise to subjective noises, to vertigo, and to disturbances of hearing. The present investigations, made by Dr. Eichler, in the laboratory of Prof. Ludwig at Leipsic, on the physical system of the labyrinth, have established that the labyrinth possesses a whole special system of vessels, of which the arterial ones derived from the internal auditory artery penetrate by numerous ramifications into the different parts of the labyrinth, break up into capillary branches in the cochlea, the vestibule, and the semi-circular canals, and pass then into the venous capillaries which unite into several veins and terminate in the venous system of the brain. This special vascular system of the labyrinth has

numerous anastomotic relations with the neighbouring parts, especially with the tympanic cavity, and Prof. Politzer was the first to establish, by means of microscopical sections treated with osmic acid, that the vessels of the mucous membrane of the cavity of the tympanum pass through the osseous portion of the promontory, and enter into an anastomotic communication with the vessels of the coats of the labyrinth, an anatomical fact which has been confirmed by pathological sections from dead subjects.

It is this special vascular system which is the normal seat of hyperæmia, such as is produced in particular in certain infectious forms of otitis, but especially in typhoid and in diphtheritic scarlatina.

But another frequent cause is to be sought for in certain obstacles which prevent the reflex of venous blood from the labyrinth towards the cavity of the cranium, such for example as cerebral tumours and the pressure which they exercise on the venous channels of the brain, more particularly the tumours at the base of the brain proliferating into the internal auditory meatus, and compressing thus the internal auditory artery and vein.

Labyrinthine hyperæmias are also due to the influence of the nerves, especially the sympathetic nerve, and of this there is no doubt in view of the symptoms produced, a rapid blush suffusing the face, the external meatus and the tympanum, and disappearing with equal rapidity, noises in the ears, and vertigo.

There are also certain forms which are transitory after acute inflammation of the tympanum, or nervous influence, and which are not followed by functional disturbances, but the lasting hyperæmia caused by chronic inflammations of the drum or by obstructions in the circulation give rise to various disorders and to lasting disturbances. The changes which result from it are dilatation of the vessels, pigmentary exudation, thickening of the membranous parts of the labyrinth and of its capsule. We shall return to this further on.

II. *Hæmorrhagic Extravasations*.—These hyperæmias of themselves often give rise to extravasations of this kind in the labyrinth: but these may also be produced without pre-existing hyperæmia. They are met with most frequently in infectious diseases, such as typhus, scarlatina, diphtheria, small-pox, acute tuberculosis, chronic nephritis, diabetes, leukhæmia, and, besides, in all the circulatory troubles which arise from organic affections of the heart and lungs. In this last case the hæmorrhages must be attributed to faults in the circulation. On the other hand, in infectious diseases they are due to changes brought about in the vessels by the action of the specific microbes, and which lead to a diminished resistance of the walls of the said vessels. In all these cases these extravasations appear in the form of circumscribed hæmorrhages or of sanguineous effusions of a more considerable size in the different parts of the labyrinthine cavity. As has been perceived by Messrs. Knapp and Politzer, as the result of *post-mortem* examination, they are found much more often than is generally supposed in chronic suppuration of the tympanum, especially in those which are complicated with caries, and the frequency of their occurrence shows how numerous must be the anastomoses between the vessels of the middle ear and those of the

labyrinth. The most interesting ones described by Moos, Steinbrügge and Politzer in cases of hæmorrhagic peri-meningitis and of hæmatoma of the dura mater, then in tubercular meningitis, were found in part along the vessels and nerves, and in part between the layers of the lamina spiralis ossea, and in the spiral ganglion, besides hæmorrhagic effusions in the trunk of the auditory nerve and thromboses in the internal auditory artery.

As regards the labyrinthine hæmorrhages, which bear the name of "Ménière's disease," their enumeration is reduced to the single case observed by this scientist after death, that of a young girl attacked during life with vertigo, nausea, and disturbances of co-ordination; but no other similar case having been observed since then, the anatomical basis of Ménière's disease is entirely wanting, and hence we are unable to speak of Ménière's disease, but only of Ménière's group of cerebral symptoms from the clinical point of view which he, in any case, was the first to demonstrate as related to labyrinthine disease.

It has not yet been demonstrated that the *labyrinthine symptoms* frequently observed after the internal administration of certain drugs, such as quinine, salicylic acid, etc., are produced by hæmorrhages into the labyrinth; in this respect we have only presumptions to deal with, based upon experiments made by Kirchner on rabbits. Similarly to hyperæmia of long duration, sanguineous extravasations frequently produce in the labyrinth pigmentary exudations; the hæmoglobin is deposited both upon the membranous part and the walls of the labyrinth in the form of irregular spots, either brown or blackish, and firmly adhering to the tissues of the organ. These pigmentary deposits undoubtedly exercise an exciting effect on the extremities of the auditory nerve, and in consequence they lead to loud subjective noises.

III. *Inflammations of the Labyrinth.*—They are primary or secondary. We have more information in regard to them from a pathological standpoint than with regard to the changes already mentioned. As far as the primary inflammations are concerned, our information applies only to their issues and not to the changes effected in their earlier stages.

As for the pathological changes resulting from *secondary inflammation*, regarding which we have more precise information, they are the result either of acute or chronic infectious diseases, or of inflammations of the same kind affecting the cavity of the tympanum.

As Politzer and other authors have been able to establish it, the most pronounced of these changes are seen in particular in the lower parts of the cochlea, while the upper portion of this organ is found relatively little changed. We are reduced to hypotheses with regard to the cause of this state of matters. The most probable is that of Steinbrügge, who thinks that inflammations propagated from the cranial cavity to the labyrinth along the ramifications of the nerves of the cochlea reach in the first place the lower convolution, as is seen in cases of cerebro-spinal meningitis when these changes are manifested first in the lower part of the tympanic scala of the cochlea.

The first case of *primary inflammation* of the labyrinth was described and demonstrated by Politzer at the congress at Milan. It concerned a

boy, thirteen years of age, who had become deaf and dumb at the age of two and a half years as the result of a labyrinthine otitis, and in the preparation there could be seen by means of artificial light the complete invasion of the labyrinth by osseous tissue and ossification of the cochlea, whose outlines could be distinguished in the surrounding bone.

(a) The anatomical changes *produced as the result of infectious diseases* arise either from the invasion of specific microbes or from that of purulent matters into the labyrinth. There results from these invasions an inflammation of the capsule and of the membranous portions of the labyrinth, which lead either to destruction of tissue or to proliferations of the connective tissue, which are sufficient to fill up either entirely or in part the cavities of the organ in question and to terminate in ossification. These changes appear more or less intense according to the more or less advanced degree of inflammation, slight swelling, thickening of the labyrinthine capsule, or numerous filaments extending between the osseous walls and the membranous structures to such an extent as to fill the cavities completely with osseous substance. It is to Moos that we are indebted for the demonstration of the anatomical changes resulting from infectious diseases, such as scarlatina, diphtheria, measles, from the proved invasion of specific micro-organisms into the labyrinth through the lymphatic channels leading from the tympanum to this organ. The action of these micro-organisms has for effect the production of connective tissue, with its ossification as a sequel; then a necrosis, with degeneration of the said tissue, brought about either by thrombosis of the capillary vessels or by the direct action of the virus on the tissues themselves.

(b) The nature of the severe changes thus produced is in general, and with the exception of a few modifications, the same as that which one can demonstrate as resulting from diphtheria, the first object of a special study by Prof. Moos. Even if he has not been able to demonstrate the presence of the specific microbes of diphtheria, he has in any case established the fact of the secondary infection by the streptococcus, which is found in almost all the tissues, as well in the endo- and peri-lymphatic cavities as in the aqueductus vestibuli, the ramifications of the auditory nerve and the osseous cavities of the petrous bone itself. The destructive changes brought about by this invasion are the same as those already described. We cannot be surprised at their severity if we know the destructive effects of the presence of streptococci in mass.

(c) Very nearly the same holds good with regard to the effect of infectious labyrinthine disease developing *in the course of measles*, or after the disappearance of these, and similarly set forth with a whole series of histological observations by Prof. Moos, as holds good of the causes of destructive changes in the labyrinth attributed by him, as the sequel of these affections, to the invasion of the streptococcus into this organ. The disorganizing action of this microbe has been manifested by a fatty degeneration of the endothelium of the blood-vessels, which has brought about coagulation and thrombosis of these vessels, and an engorgement giving rise to colloid changes in the labyrinthine tissue,

then of other destructive alterations in the periosteum, the osseous portions of the cochlea and the ramifications of the auditory nerve.

(d) The changes which follow cerebro-spinal meningitis have been demonstrated by Heller, who was the first to prove that the deafness which resulted from them was produced by a suppurative inflammation of the labyrinth. It is the aqueduct of this organ which allows of the passage of these purulent invasions, and notably the aqueductus cochleæ which is in direct communication with the cerebro-spinal space where the exudation takes place. These changes consist chiefly in destruction and atrophy of the membranous parts of the labyrinth, and of ramifications of the auditory nerve, in partial or total disfigurement of Corti's organ, atrophy of the cells of the spiral ganglion, and the deposit of amorphous detritus mixed with a very few cells, and, further, as the residuum of the original inflammation, the new formation of connective tissue with partial ossification of this latter.

(e) Politzer in his turn demonstrated the frequency of *secondary affections resulting from chronic suppuration in the middle ear* arising either after the destruction of the labyrinthine fenestræ by the propagation of the inflammation to the membranous portions of the labyrinth, or without appreciable lesion of the labyrinthine wall by extension of the pathological changes by means of the blood-vessels and lymphatics, the routes of anastomosis between the tympanic cavity and the labyrinth. As regards the first form of these affections, it recalls a case described by Politzer at the congress at Brussels, in which the footplate of the stapes had been destroyed by an overgrowth of connective tissue, subsequent to suppuration, in which also the proliferation had extended into the vestibule of the labyrinth, as shown by a preparation which he exhibited in confirmation.

He afterwards demonstrated the second form of inflammation described by means of another preparation taken from a deaf woman, aged ninety-three, in which the external auditory meatus and the cavity of the tympanum were filled with cholesteatomous masses, resulting from a previous suppuration.

In the former preparation the external wall of the labyrinthine vestibule was covered with tubercular epithelial proliferations, which were found equally on the lateral wall and at the fundus of the utricle. In both cases pronounced labyrinthine symptoms were completely absent. Prof. Politzer has further exposed, in a certain number of cases of chronic suppuration, the results of chronic inflammation of the cochlea taking the form of a proliferation of connective tissue, with partial simultaneous ossification found most frequently in the scala tympani of this part.

(f) Another form of exudation into the labyrinth little known up to the present, and demonstrated by him, is that which is brought about by the presence of an obstacle of some form or another in the internal auditory meatus, comprising the blood-vessels therein, and producing exudation as the result of the driving back of the blood current. Politzer quotes in this connection the conclusive example of an observation made by him on a woman, aged sixty-three, affected with deafness of the left

ear in the course of a cancerous affection of the lateral region of the neck, an affection which had penetrated through the base of the brain into the cranial cavities. The cancerous mass advanced in the direction of the left petrous bone, surrounding and compressing the carotid artery and the jugular vein, then proliferating in the interior of the internal auditory meatus. The exudation, consisting of a granular mass, was situated in part on the capsule of the labyrinth, or of the wall of the labyrinth, and partly on the spiral laminae. The tympanic cavity and the Eustachian tube showed no appreciable change.

(g) The labyrinth may be similarly affected in cases of leukhæmia, and there can then be produced in the organ pathological changes which lead to complete deafness. The first demonstration with regard to this was brought forward by Politzer at the congress at Brussels in the case of a young man of thirty-two years who was affected long previously with a suppurative otitis of the left middle ear, and who became deaf a year before his death.

The preparations from this case show :—

1st. A new formation of connective and osseous tissue in the tympanic scala of the cochlea.

2nd. Complete invasion of the semi-circular canals by connective tissue.

3rd. The accumulation of lymphatic cells in the interior of these canals, in the vestibule and in the vestibular scala of the cochlea.

Another similar case has been described by Prof. Gradenigo, who has found sanguineous extravasations in the mucous membrane of the tympanic cavity affected previously by suppurative inflammation, but nothing similar in the labyrinth. Then another by Prof. Steinbrügge, who demonstrated changes very similar to those indicated above by Politzer in the case of a young man of twenty-five years of age who died as the result of myelogenic leukhæmia, and who had been previously affected with syphilis, the changes being as follows : adhesions in the tympanic cavity, thickening of the membrane of the fenestra rotunda, invasion of the cochlea by hæmorrhagic extravasation, and almost complete ossification of the semi-circular canals.

(h) Changes of the same nature are produced also in the labyrinth as the result of syphilitic affections. There have been brought forward in this respect, as the best known up to the present, cases of hyperostosis of the temporal bone with narrowing of the labyrinthine cavities, and of the internal auditory meatus produced by chronic syphilis ; and, further, as has been already pointed out, a proliferation of the labyrinthine capsule with narrowing of the fenestra ovalis terminating in ankylosis of the stapes ; then a case of acute suppurative inflammation observed by Schwartze in a syphilitic woman, who died of acute purulent meningitis. Among the few anatomical preparations demonstrating the results of syphilis, Politzer has found some showing atrophy and destruction of the ganglionic cells of the spiral ganglion, as well as the fibres of the auditory nerve in the cochlea, the former having been observed and described by him in the case of a man aged fifty, who had been deaf for ten years, and affected with syphilis, whereas the latter were demonstrated by Moos and Steinbrügge.

Politzer has drawn attention further to an interesting case of Prof. Kirchner's dealing with the pathological changes of the blood-vessels of the labyrinth as the result of syphilis in a patient affected with the tertiary disease, and consisting in an infiltration of the walls of the vessels with small cells identical with that described by Heubner in the cerebral vessels of syphilitic subjects.

The corollaries of these changes are manifested in the form of fatty degeneration and pigmentation of the endothelium; proliferation of the connective tissue, and obliteration of the vessels in certain localities.

These changes present further in general the same characters as the results of chronic inflammation mentioned above. Thus in two cases of syphilis Moos has demonstrated the thickening of the periosteum of the vestibule; hypertrophy of the connective tissue attaching the membranes to the osseous parts of the labyrinth, and even in one of the cases the presence of calcareous concretions in the wall of the vestibule. Prof. Gradenigo has also shown in the further development of this connective tissue the possibility of its ossification, which he attributed to the results of hereditary syphilis in a young girl of tuberculous diathesis, of the age of fifteen.

(i) Another series of labyrinthine affections is that which shows itself as the result of tuberculosis, without, however, the demonstration, up to the present, of a primary tuberculous disease of the part. The few observations extant with respect to this have been made on individuals in whom the middle ear was already destroyed by tuberculosis, and in whom the tuberculous ulceration had already established itself on the capsule of the labyrinthine cavity. As symptoms of these affections, it is remarked that, as soon as the capsule is perforated by the ulceration, inflammation spreads over the walls of the cavity and the membranous parts of the labyrinth, producing thus, on the one hand, necrosis of the tissues, and, on the other, proliferation of newly-formed connective tissue, which entirely fills up the spaces.

(j) To the list of pathological changes of the labyrinth must be added the primary affection of the labyrinthine capsule already described by Politzer at the congress of Rome. He demonstrated then that in a large number of cases, looked upon as dry chronic catarrh of the middle ear, there were osseous proliferations of new formation in the said capsule round the fenestra ovalis, and extending in the direction of that fenestra, and leading to an ankylosis of the stapes or to complete occlusion of the opening. When the affection is at an advanced stage the time comes when the osseous proliferation penetrates also into the cavity of the labyrinth, notably into the scala tympani, and carries with it complete disorganization of the membranous parts of the labyrinth and of the organ of Corti.

(k) In the last place Politzer draws attention, among the affections of the same kind demonstrated and treated by him, to the depression of the membrane of Reissner as the result of an increase of extra-labyrinthine pressure on the organ of Corti, brought forward first by Steinbrügge, and afterwards by other authors, including himself, and he cites the case mentioned by Steinbrügge of a boy twelve years old who died as the result

of a cerebral tumour, in whom the increase of the intra-cranial pressure manifested itself during life by the appearance of optic neuritis; likewise another, narrated by Gomperz, in a tuberculous subject, who died of internal pachy-meningitis and cerebral oedema, with the observation that in both cases the membrane of Reissner was found so much depressed that there remained only a very slight fissure between it and the membrane of Corti.

If all these observations have inculcated the importance of the study of labyrinthine affections, not only for the appreciation of anatomical changes in the ear, but, further, for the diagnosis of auditory disturbances taking their rise in the labyrinth, it must be kept in mind that at present we are only on the threshold of scientific knowledge of these affections; nevertheless, we have reason to be proud of the results obtained so far, as being so many landmarks and points of departure for future discoveries destined to throw fresh light on the clinical character, the diagnosis and the therapeutics of all the affections of the auditory organ.

Dundas Grant (Trans.)

ADDRESS IN COMMEMORATION OF THE LATE PROFESSOR MOOS.

Delivered before the Fifth International Congress of Otology at Florence, 1895,

By Prof. ADAM POLITZER.

Gentlemen,—Few weeks have passed since the shadow of death has fallen upon one of the most eminent founders of modern otological science, one whom we have been accustomed to see constantly in the foremost rank in our assemblies, whose lofty scientific productions we have never ceased to admire, and on whose lips we were, as it were, suspended from the moment when he commenced to place before us his clear and instructive views, whose wit, always young and facetious, animated with its brilliance all our reunions.

Moos is no more. The hope of seeing him again among us in this assembly, of hearing again the new discoveries which he reserved for each congress, this hope has been prematurely snatched from us by death, and it only remains for us to fulfil the last duty to his memory by bearing testimony to all his merits and his virtues.

It is upon me, gentlemen, as one of his oldest and most intimate friends, that devolves the sad honour of tracing before you the picture of his life, a life made up of work, of abnegation and of devotion. The life of Prof. Moos is in fact a magnificent model of a whole career of labour and incessant effort practised for the sake of reaching the highest point of scientific knowledge.

Born in 1831, at Randegg, in the Duchy of Baden, in a position of life which was more than modest, and completely unendowed by any of the blessings of fortune, he carried on during his life a hard struggle for existence, and it was only by enduring innumerable privations that

he was able in 1856 to attain brilliantly the degree and title of doctor. His indefatigable zeal and his ardent enthusiasm for medical science acquired for him in a short time the favour of his professors, and they had him appointed, when he had only just graduated, to be assistant of Prof. Hasse in the clinic for internal medicine in the University of Heidelberg. He had thus the opportunity of acquiring a profound knowledge of internal pathology, and when, later on, he devoted himself to the special practice of otology, he recalled, frequently with satisfaction, all that he owed to this period, which had saved him from that restricted specialism which one meets with so much regret to-day in a large number of specialists. In fact, we find in all his works superior appreciation of the correlation of our special science with the general principles of medicine. It is this profound knowledge which gives such a high value to all his works in the clinical department of otological science. In 1859 he was entrusted with the teaching in the University of Heidelberg, where he acquired for himself in a very short time the reputation of being a teacher of the greatest merit, and an eminent practitioner in South Germany.

From this moment he devoted all the time that his practical occupation left free to work of a purely scientific character. At the commencement of his otological career he gave himself up in particular to the study of the special literature of this subject, and in particular that of the works of the English otologists, who at this period opened out new horizons for our science. The result of these studies was the translation of the treatise on "Diseases of the Ear," by Toynbee, which made him the first to communicate to the German medical public the works of this English scientist.

Soon, however, Moos became convinced that, if otological science was to reach to the same height as the other branches of medicine had already attained, it was only by anatomical researches that the foundation could be reached—a way already indicated by his contemporaries, Toynbee and Tröltsch. The scientific works of Moos extended over a period of more than thirty-six years, and it is to the continuous and incessant labour which he devoted to his investigations, as well as to his writings, that we have to look for the explanation of the large number of his publications. There is no branch of our special science to which he has not contributed. The anatomy, the physiology, the pathological anatomy of the organ of hearing, clinical otology, bacteriology, cerebral disturbances of hearing, otopathic neurosis, the operative surgery of the ear—all these branches of our art have, one after the other, been the object of his research. The publications of Prof. Moos have for the most part appeared in the "*Archiv für Ophthalmologie und Otologie*," founded by him in 1869, in common with his friend, Prof. Knapp, and in the "*Zeitschrift für Otologie*," published by the two since 1879. Those which date from before 1869 are found dispersed in various reviews. It was in collaboration with Prof. Steinbrügge, his compeer and his friend, that he published a small portion of his works between 1878 and 1885.

The detailed enumeration of his writings would take too long. I would, however, like to give prominence to the special fact that the

results of his researches have essentially contributed to give to modern otology its scientific character. We have only to remember, among others, in this respect his notable publications on the invasion of micro-organisms into the labyrinth in the course of infectious diseases. Among his anatomical works, his researches on the blood-vessels of the tympanic membrane, and then on the anatomy and physiology of the Eustachian tube, would be alone sufficient to ensure him an eminent place in the history of our science. It is, however, his histo-pathological investigations which have definitely founded his reputation. These works reveal all the conscientiousness and the exactitude which he brought to bear upon his scientific researches, and the care with which, without ceasing, he sought to go to the very bottom of things. This tendency to exhaustive investigation appears in every one of his works, and everywhere he has taken upon himself the task of bringing into accord anatomical demonstration with clinical signs. He no longer confined himself, as at first, to simple anatomical facts, and the more he advanced the more he imposed upon himself the necessity of making anatomical facts the bases of the so-called clinical phenomena. We find a brilliant example of this in his treatise on tumours of the brain, the high value of which for the diagnosis of cerebral affections is universally recognized, even by pure physicians. The attentive examination of the works of Moos, as regards their value, reveals to us this remarkable fact, that the scientific productions of his later years may be placed, without contradiction, in the rank of his very best works. It is sufficient for this to cite his researches on the invasion of micro-organisms into the labyrinth as a sequel of infectious diseases. He shows with minute clearness the destructive effect of this invasion on the membranous parts of the labyrinth, which terminates subsequent to suppuration in the formation of connective tissue, then ossification, and sometimes even necrosis.

It is thus that he gives us the anatomical explanation of panotitis, the frequent cause of complete deafness in infectious diseases.

The scientific productions of Moos appear in a still more admirable light, when we call to mind that during the last twenty-five years of his life he was struck by disease. In 1871, after the severe fatigue which he underwent in the incessant care which he had to give to the wounded, there appeared the first symptoms of a diabetic affection, which threatened his health more and more as years went on. To this affection were added disturbances of hearing, which made steady progress during more than twenty years, and rendered his habitual relations with his patients and his pupils more and more distressing, while at the same time they cast a shade of melancholy on his spirits, which up to then had been so jovial and so gay. These physical sufferings, however, were unable to subdue his intellectual activity; his ardent love for science impelled him to break up new paths and to undertake new researches. It is thus at an advanced age we see him journeying to Berlin to acquire in Koch's laboratory the necessary knowledge of bacteriology, of which he saw in advance the great importance to modern otological science.

In spite of the aggravation of his malady, Moos was very seldom absent from our otological congresses. He felt powerfully the necessity

of instructing himself from time to time by a personal exchange of ideas with his *confrères* and his friends. We have seen him at the congresses of Milan, of Brussels, of Berlin, and last year again at Rome. His arrival at this last congress, his address to the otological section, appear to us as a last effort of his indefatigable mind to overcome his physical weakness. It was with sincere anxiety for his health that we then observed the decadence, only too perceptible, of his physical figure.

On his return to his home after the congress, Moos undertook a new work of considerable importance, which was interrupted by a complicated pneumonia, which brought him within a near touch of death. To the great joy of his family and his friends, he recovered from this severe affection, and so rapidly that he was able to resume his interrupted task. However, in the course of the winter, he was attacked with a suspicious cough, the too certain precursor of the tubercular phthisis—to which he finally succumbed on the 15th of last July, at the end of a long and painful period of suffering, wept over by his faithful wife and companion, whom he had loved above all, and with whom he had lived for thirty-five years in the most intimate and happy harmony, deeply regretted by all his friends and his numerous admirers.

Of his last work, "On Lesions of the Organs of Hearing in their relation to Medical Jurisprudence," of which already two-thirds were completed, we unfortunately have only a fragment remaining.

In Moos there disappears from the world an eminent man, in whom profound science and great creative talent were joined harmoniously with the most precious qualities of character and of heart. Indefatigable in his researches, conscientious and prudent in the interpretation of anatomopathological demonstration and of clinical observation, exercising a severe criticism in regard to his own work, he welcomed with cordiality the works and the discoveries of others, and by his frank communications he encouraged the efforts of his younger and less advanced *confrères*. His love of truth, his fidelity in his affections, his modest and gentle manner, gained for him a large circle of devoted friends, who remained attached to him till death. He was related by the most intimate bonds of friendship with Prof. B. Knapp, of New York, and I consider myself fortunate to have been from the commencement of our common careers in constant friendly relation and scientific communication with him.

Prof. Moos had a good, tender and sympathetic heart. Simple in his manner of living, strictly economical as regards his personal expenses, he practised in secret beneficence and charity. His constant disposition to come, without ceasing and without remuneration, to the help of the poor when in suffering was universally recognized. In spite of a large element of seriousness, and of all his scientific pre-occupation, he enjoyed a gaiety of temperament, a frankness and joviality, which rendered his society agreeable and interesting by the sallies of his wit and his humour, some sparks of which we could detect and admire from time to time in the course of the last congress at Rome. But already a certain tinge of melancholy spread over this joyousness, for already the angel of death had brushed him with his wings.

During his career he was the recipient of many honourable distinctions,

both from the Government of Baden and from the body of the professors of the University of Heidelberg. It was not part of his nature to run after marks of honour and distinction, but he was sincerely happy when the value of his works was appreciated by others.

Moos is no more, but all that a whole life of work and of incessant labour has been able to create remains preserved for ever to science and assures to its author an immortal renown. In honouring his memory we fulfil a duty of gratitude towards him who has left us for ever. This gratitude we owe to him for the rich and precious treasury of knowledge which he has bequeathed to otological science, as well as for the magnificent example which he has given to us all, as much by his indefatigable devotion to work as by his enthusiastic zeal for our science in particular.

He will remain thus a brilliant and encouraging example to the future generation—one truly worthy of the renown which he has so bravely acquired in the arduous domain of our art and of our science !

Dundas Grant (Trans.)

INAUGURAL ADDRESS at the FIFTH INTERNATIONAL CONGRESS OF OTOLOGY.

Delivered by Prof. V. GRAZZI.

PERMIT me to follow the example of my predecessors at Milan, Bâsle, and Brussels, and to address you in French, only regretting that on these important occasions one does not hear the tongue of our forefathers which was once universally understood. To few is it given, as it is to His Excellency Dr. Baccelli, to harmoniously unite the study of the biological sciences with the culture of the Latin classics.

When Prof. Voltolini of Breslau, whose loss we all regret, was inaugurating in Milan the second International Congress of Otology, in September, 1880, he remarked that it was not by accident that Italy had been chosen for the first meeting of otologists in Europe. Our foreign colleague—in whose veins, however, ran the blood of his Italian ancestors—said that our country was indebted for this honour to the act that it had given birth to Corti, who had revealed a new world in the organ of hearing by his discoveries, and so had brought about the renaissance of our specialty. It was Kölliker who wrote: “*Les recherches histologiques sur les limaçons commencent avec Corti, dont l'excellente monographie doit servir de base à tous les observateurs.*” The successive international congresses of otology (initiated in America in 1876) were held in 1884 in Bâsle, and in 1888 in Brussels; the first under the presidency of the lamented Dr. Burckardt de Merian, and the second under that of my venerated friend Dr. Charles Delstanche. We are all pleased and gratified to see him in our midst to-day, for, in

referring to the gathering in Brussels, it was said by Prof. Gradenigo that we Italians were particularly grateful to "this Belgian who writes "and speaks our language like an Italian, and who is indeed an Italian "in feelings and aspirations." To another otologist of world-wide fame, an admirer of the artistic beauties of Italy, and one who loves the country as if he had been born under its sky—I refer to Prof. Politzer of Vienna—we are to a great extent indebted for the honour conferred on the country of Eustachius, Valsalva, Morgagni, Scarpa, Corti, and Tafani, of receiving the otologists of the world for the second time within fifteen years. I welcome our esteemed leaders, and all those who from Brussels wished to see continued at Florence the series of international otological congresses. And since, although I was not present at that gathering, the high and unmerited honour was conferred of electing me President, allow me to-day to thank you from the bottom of my heart.

During the seven years which have elapsed since this honour was conferred upon me, I have always felt myself inferior to the task, and, knowing the difficulties to be overcome, I have frequently been doubtful of success. This has only served to increase my delight this morning on seeing that the result is already guaranteed both by the number and the merit of the otologists who have come from both Europe and America, and by the importance of the communications announced on the programme. You know partly what these difficulties were; it is a pleasure to me to be able to declare that I have found in you loyal allies in overcoming them. At the International Medical Congress in Berlin, when Rome was chosen for the next meeting, the otologists there present decided to hold the Fifth International Congress of Otology in Florence, eight days before the general gathering. As the time drew near certain Italian otologists formed themselves into a committee to propose the suppression of the Florence Congress and its amalgamation with the Otological Section of the Congress in Rome. I refrained from taking part in these deliberations, not wanting to contribute in any way to the losing of the honour by my adopted city, and at the same time not wishing to oppose the wishes of my esteemed colleagues, although I should regret losing the presidency with which I had been honoured. Dr. Delstanche, who might be considered as still in office until the next meeting, did not wish to undertake the responsibility of putting an end to the institution of international congresses of otology, of the importance and scientific as well as practical utility of which he had fully spoken when opening the meeting in Brussels. He therefore made inquiries of all those who had taken part in that gathering and who had voted for the next congress being in Florence. As a result an immense majority voted for the preservation of the independence of the international congresses of otology, and confirmed the selection of Florence, deferring the meeting to this year so as not to clash with the larger congress in Rome. This explains why seven years separate us from the last gathering instead of the regulation four. I have thought it well to recall these facts in order to explain the long delay. Dr. Morpurgo of Trieste, who has been in the habit of calling the Florence Congress a "will-o'-the-

wisp," because its date always appeared near but never arrived, will to-day be content to see that the mirage has finally disappeared, and that we can all unite in expressing the hope that the delay should not be repeated in future congresses.

The pleasure of seeing united here for love of science and humanity this brave phalanx of otological workers is diminished by certain memories which I venture to recall, certain of faithfully interpreting your sentiments. We see no longer here colleagues who never missed our gatherings, but who have now been mown down by the inexorable scythe of death. Prof. Politzer will shortly read you an *éloge* worthy of Moos of Heidelberg, that charming old man who, last year in Rome, held out to me his hand, a little tremblingly, and promised to be amongst us to-day. I would recall Sapolini of Milan, who had faith in the success of otology at a time when the mention of this specialty only brought a sardonic smile to the lips of medical men. Previous to his death on the 2nd of June, 1893, he was the proposer of a separate section for otology in the early International Congresses of Medicine. He brought forward the first proposal at the International Congress in Florence, and he never tired of repeating it at successive gatherings, until the profession, convinced of the importance acquired by otology in the course of a few years, finally agreed to accept it. I will not speak of his works on the anatomy and pathology of the ear, but I cannot forget how much he contributed to the success of the second International Congress of Otology, over which he presided so admirably in his own city of Milan.

In the same year of 1893 we also lost, at the comparatively early age of fifty, Dr. Longhi, who was one of the secretaries of the Milan Congress. To his scientific merits we must add that of his being the first to have proposed an asylum where children affected with serious acquired deafness might be both treated and instructed at the same time. We have also to lament the loss of Troeltsch, who with every right may be called the father of modern otology. Doubtless many of us found in the works of the distinguished otologist of Wurzburg the first spark which ignited in them the affection for this interesting specialty. I recall Joly of Lyons, who never failed us at these reunions. Knowing our language he was, so to speak, the highway by which a good part of our Italian work on the ear passed into France. I cannot conclude this mournful catalogue without recalling the names of two illustrious men who rendered signal service to otology, although their work lay in a field removed from us. The genius of Helmholtz threw a ray of bright light into the darkness of the physiology of the labyrinth; the other was my old fellow-student and dear friend Alessandro Tafani, disciple and successor of the immortal Pacini.

Gentlemen, having concluded this sad duty, permit me to direct your thoughts to the works of our session. The progress made by otology in the second half of this century has been immense, and all of you have contributed to it in a greater or less degree, some in the field of science and others in that of practice. Even when any importance was denied to our specialty it was admitted that otologists might have done something

for the semeiology and pathology of the ear. But no credit was given to it for any curative power, which is the part which most interests those who physically and morally suffer from ear troubles. But to-day, thanks to the advancement of surgical studies, such a depreciatory remark is no longer possible, and in our department we obtain results which are certainly not less satisfactory than those secured in any other branch of medicine or surgery. The titles of many of the communications announced in the programme show the tendency of otology, and provided we do not carry surgical treatment to exaggeration—as Lange of Copenhagen has justly remarked—I believe that this impulse will impart still greater progress to our specialty. If we should succeed in contributing to this, we will be content with our work. With the hope that this will be realized, I am pleased to declare in the name of His Majesty Humbert, King of Italy, that the Fifth International Congress of Otology is now open.

St. Clair Thomson (Trans.)

THE FIFTH INTERNATIONAL CONGRESS OF OTOLOGY.

Held at Florence, September 23rd to 26th, 1895.

Reported by Dr. DUNDAS GRANT.¹

THE Inaugural Meeting was held in the forenoon of Monday, September 23rd, in the Aula Maxima of the Institute for Higher Studies. Prof. Grazzi, President of the Organizing Committee, occupied the chair, and he, as well as several representatives of the authorities, offered a gracious welcome to the Members of the Congress.

Prof. GRAZZI was elected to the presidency of the Congress by acclamation, and delivered an eloquent address, in which he referred feelingly to the gaps which death had made in the ranks of otology, including, among others, Sapolini, Troeltsch, Calmettes and Moos. The eulogy on the last he left to Prof. Politzer. (*Vide* p. 806.)

Prof. POLITZER, of Vienna, then pronounced a touching panegyric on the late Prof. Moos, of Heidelberg. He referred to his early struggles, his untiring industry, his profound knowledge of general pathology, which pervaded his otological work and stamped it as having a value quite its own, the simplicity of his life, his secret beneficence and his devotion to his labours even when he knew his days were numbered. (*Vide* p. 802.)

The ordinary meetings were presided over, at the invitation of the President, by Profs. Politzer, Kirchner, Pritchard, and Drs. Gellé, Moure, Delstanche and Morpurgo.

¹ Many of the papers, of which merely the outlines are given in this report, will be published in the JOURNAL OF LARYNGOLOGY in greater detail or in full.

Monday, September 23rd. Afternoon Meeting.

 Prof. GRAZZI in the Chair.

A discussion on *General Constitutional Treatment in Diseases of the Ear* was opened by Dr. GELLÉ (Paris).

He pointed out that often the most important information the aurist could give was that the ear was quite normal, and that the physician must look elsewhere for the cause of constitutional disturbances, though in many instances he could trace them to disease of that organ. Of the acute forms of aural disease, he referred first to those occurring in the course of the eruptive or other fevers, recommending careful nasopharyngeal treatment as the best means for their prevention, and in particular Guye's method of nasal irrigation, the soda-water syphon douche, and, if necessary, the removal of tonsils. Deaf-mutism, he thought, might be at times prevented by prophylactic specific treatment of the mother during gestation, and by attention to the auditory organs in the infant. He alluded to the influence of intestinal antiseptics practised by means of calomel, naphthol, salol and other means in preventing the multiplication of pathogenic microbes and the occurrence of septic infection, and directed attention also to the hygiene of the mouth. In acute otitis in general he administered sulphate of quinine, but when it arose from influenza he preferred antipyrin, and in gouty otitis the well-tried anti-arthritic remedies. He had hopes of advantage accruing from the application of serum therapeutics in infective diseases of the organs of hearing. In chronic otorrhœa he advocated more frequent recourse to antisyphilitic treatment, and attached great importance to general treatment in gouty, diabetic and tubercular subjects, believing in a future for serum treatment in the last. The removal of causes of weakness, such as prolonged suckling, was of urgent importance. The early administration of pilocarpin in sudden deafness was strongly advocated. Hypnotism, though occasionally of value in slight cases of functional deafness, had never proved of value in severe ones, and electricity was of value in a small sphere.

There was no further discussion on Dr. Gellé's exhaustive paper.

Dr. YERSAND ARSLAN (Padua). *On Adenoid Vegetations.*

Dr. ARSLAN attached great importance to the diagnostic value of posterior rhinoscopy. In operating he employed the curette and the finger-nail, and invariably during anæsthesia by bromide of ethyl.

The discussion was continued by Drs. CORRADI, GORIS, GRADENIGO, PRITCHARD, BABER, and others.

Dr. HELME protested against the employment of the finger-nail as liable to convey septic organisms.

Dr. MOURE held that the finger could be sterilized for this operation as well as for any other serious surgical proceeding such as a laparotomy.

Dr. DUNDAS GRANT operated under nitrous oxide on account of its

safety, and in order to attain the necessary degree of rapidity, he was accustomed to commence by scraping with his finger-nail, sterilized by means of lysal and then alcohol, so as to judge at the same time of the extent, nature and situation of the growths, and select the instrument suitable for concluding the operation, namely, Gottstein's or Delstanche's curette when the back of the pharynx was the site of the growths, and Schech's or Quinlan's forceps in case of the vault being mainly involved.

Dr. OKUNEFF (Russia). *The use of Auscultation for the purpose of detecting Sclerotic Conditions of the Mastoid Process.*

A vibrating tuning-fork was placed on the parietal bone, and the chest-piece of a flexible stethoscope was applied to various points in the mastoid region. Over the sclerotic parts the sound was heard "higher," that is, with greater intensity.

Dr. COOSEMANS (Brussels). *On a Case of Cornu Cutaneum Auriculæ.*

The patient was seventy-one years of age, and presented himself for treatment of a growth on his auricle. This had commenced about a year previously, and had developed with greater rapidity after he had several times removed it with his nail, this causing a little hæmorrhage each time. It was completely removed by operation.

Prof. AVOLEDO (Milan). *On the Results of Intra-tympanic Operations for Deafness following Suppurative Median Otitis.*

He had found improvement in audition follow extraction of the malleus and incus with the addition of medication with pilocarpin to favour absorption.

Tuesday, September 24th. Morning Meeting.

Prof. POLITZER in the Chair.

DISCUSSION ON PROF. AVOLEDO'S PAPER.

Prof. FERRERI thought other factors might be at work and urged the employment of the caustic treatment, for which he is so powerful an advocate.

Dr. MORPURGO (Trieste) inculcated the need for the greatest caution for fear of bringing back the discharge or of injuring the facial nerve, especially in view of the fact that the otorrhœa could often be checked without operation.

Dr. GELLÉ (Paris), remembering how many cases were kept up by intra-mastoid suppuration, advocated an early recourse to trepanation of the part.

Prof. GRADENIGO (Turin) was strongly in favour of extraction of the ossicles.

Dr. DUNDAS GRANT (London) asked Dr. Gellé whether he could in all cases detect the presence of intra-mastoid suppuration. so as to justify

opening the apophysis without previously trying the effect of the less serious operation of removal of the ossicles, which was so much facilitated by the use of Dr. Delstanche's extractor. Dr. Grant thought there were many simple operations of great value, apart from the classical removal of ossicles. He had, for example, seen great amelioration, both as regards hearing and discharge, follow the section of a tight band running backwards from the short process of the malleus, and serving to retain small cholesteatomatous masses, and to hamper the movements of the stapes.

Dr. GELLÉ replied that the views he had expressed were the outcome of his observation and experience, and he believed that in cases of persistent suppuration much time was often saved by prompt recourse to the mastoid operation.

Dr. MOURE (Bordeaux) advocated the removal of ossicles before the mastoid was trephined.

Dr. ARSLAN (Padua), like Prof. Ferreri, believed in a more thorough use of the caustic treatment, especially by means of chromic acid.

Prof. DELSTANCHE considered a conservative caustic treatment of the utmost value, and he employed chloride of zinc in the deliquescent state. As a rule he removed the malleus, and afterwards employed chloride of zinc.

Prof. FERRERI considered the application of zinc more painful than that of silver.

Prof. PRITCHARD (London) spoke in praise of Prof. Delstanche's instrument, with which the malleus could be removed by the sense of touch alone, unaided by that of vision.

Dr. DÉLIE (Ypres) recommended the use of a fifty per cent. solution of lactic acid as the best caustic.

Prof. POLITZER wished it to be distinctly understood that he had never advocated the use of pilocarpin to promote the absorption of adhesions, but only for labyrinthine disease. He considered surgical intervention on the inner wall of the tympanum most important, in view of the frequency of adhesions between the branches of the stapes and the sides of the niche for the oval window, some of which were physiological, so that only the head, and not the branches, could be seen. It was then advisable to make a horizontal cut below the stapes. If the incus was wanting, an incision should be made above also. The results of these incisions were sometimes permanent, in spite of the reunion of the severed bands, just as was seen after the performance of tenotomy of the tendo Achillis. Excision of the ossicles was not to be undertaken with a view to the improvement of audition; it sometimes had the opposite effect. He advocated in suitable cases the operation of severance of such posterior bands as referred to by Dr. Grant, and also of anterior bands. When the tip of the manubrium was tied down by adhesions of the promontory, he liberated it by incisions round it. If these operations failed to produce relief of subjective symptoms (tinnitus, vertigo, etc.), he then removed the malleus, so as to do away with the action of the tensor tympani in driving the stapes into the vestibule. Above all things, it was important to test the degree of fixation of the various parts by means of Siegel's exhausting speculum.

Prof. AVOLEDO replied that it was only in bilateral cases that he operated with any idea of improving the hearing. As regards danger to the facial nerve, no injury to it had taken place in two cases in which he had removed the incus.

Prof. GRADENIGO (Turin). *On Internal Treatment in Cases of Otitis Interna.*

Attention was drawn to the fact that some were acquired and some hereditary. In some there was actual disease in the parents, in others only in near relatives. Too little attention was usually directed to the organism. In syphilitic cases, if not too late, specific treatment was to be carried out, and especially intra-muscular injections of perchloride of mercury. In those cases in which the condition was secondary to sclerosis of the middle ear, the results were not good. They were diathetic, not infectious, and treatment was to be directed mainly towards the condition of the naso-pharynx and the tendency to catarrh. The recognition of the gouty and rheumatic elements was insisted on.

Dr. MORPURGO insisted on the necessity of experience in general medical practice on the part of the specialist. He considered it often very difficult to diagnose the rheumatic diathesis.

Mr. CRESSWELL BABER (Brighton) held that in labyrinthine cases pilocarpin should be tried, but that if, after three or four injections, no improvement took place it should be discontinued. In acute cases it was necessary to give it a full trial, the patient being informed as to the doubtfulness of definite benefit accruing. In some cases small doses of iodide of potassium were advisable. He narrated a case in which deafness accompanying myxœdema yielded to thyroid treatment.

Dr. MOURE (Bordeaux) referred to the injurious influence of glycosuria. It did not debar operation, but called for appropriate dietetic and medicinal treatment before, during, and after.

Dr. RUTTEN recommended the administration of perchloride of mercury in the form of a nasal spray of the strength of one per thousand, along with the internal administration of iodide of potassium.

Dr. DUNDAS GRANT insisted on a more careful diagnosis of the different forms of nerve-deafness. In particular he considered it most important to recognize nerve-deafness due to extreme debility. In such cases pilocarpin should be scrupulously avoided as only likely to debilitate the patient still more, and bring an otherwise valuable drug into disrepute. He found strychnine in large doses of the utmost value. He could confirm from his own experience Mr. Cresswell Baber's observations with regard to myxœdema. Again, the recognition of gout and of Bright's disease was most important.

Dr. CORRADO CORRADI (Verona) pleaded for a more prolonged trial of pilocarpin.

Dr. DÉLIE (Ypres) stated that in the form of Vin Nourry he could give larger doses of iodine without disturbance than in any other form.

Dr. GELLÉ said the same for the iodo-tannic syrup, but that it had to be well manufactured. It did not cause iodism, and did not colorize starch.

Dr. MADEUF corroborated this. If it colorized starch it was not good. When heated it ought to do so.

Prof. GRADENIGO, in replying, stated that his intention was not to make local treatment subsidiary, but to accentuate the movement in the direction of greater attention to general treatment, in view of the prevailing tendency to depend exclusively on local measures.

Dr. BRIEGER (Breslau). *On Primary Ostitis of the Mastoid Process.*

This occasionally occurred as a primary osteo-myelitis, and could only be distinguished from ordinary mastoiditis by the extreme rapidity of the destruction of bone. Secondary otitis might be of typhoid or tuberculous origin. He thought the latter less common than was generally supposed.

Tuesday, September 24th. Afternoon Meeting.

Dr. GELLÉ in the Chair.

Dr. CORRADO CORRADI (Verona). *On Traumatic Perforations of the Tympanic Membrane.*

They might occur indirectly from blows on the head, with or without fracture of the skull, and were then generally situated at the periphery. When caused by direct compression of air in the meatus he found them to run downwards and backwards from the tip of the manubrium. He was unable to produce rupture of the membrane in the cadaver by heavy blows, but he thought that it occurred more readily in the living subject, owing to tension induced by contraction of the tensor tympani. Tension might be due to narrowing of the Eustachian tubes and the drum might be weakened by cicatrization. He narrated three cases.

Dr. GELLÉ (Paris) described a case of bilateral rupture from flat-hand blows given in play on the two ears simultaneously.

Prof. POLITZER drew attention to two points in the diagnosis of traumatic perforation: (1) the presence of blood on the edges of the tear, (2) the full and free passage of air by Valsalva's method.

Prof. FERRERI (Rome). *On Senile Changes in the Middle Ear.*

He thought there was an undue tendency to attribute senile defects of hearing to labyrinthine change. He found more frequently the middle ear affected, and in particular the ossicular articulations.

Prof. GRADENIGO thought a continuance of such inquiries necessary.

Prof. POLITZER reminded the congress of his anatomical investigations, showing disease of the labyrinthine capsule and anchylosis of the stapes.

Prof. MASINI (Genoa) pointed out that Prof. Politzer's investigations were on cases of severe deafness, whereas Profs. Ferreri and Gradenigo's remarks applied to old men with normal hearing.

Dr. GELLÉ insisted on the recognition of the influence of senile degeneration of the nervous system, especially as regards the cerebral

functions, and mentioned a case in which under this influence complete deafness had ensued without there being any lesion of the auditory apparatus.

Dr. BAR (Nice). *Aural Complication of the Operation for Adenoids.*

In a case of operation carried out with all care and antiseptic precaution there occurred three days later pain and constitutional disturbance, followed in two days by a purulent discharge. The incisuræ of Santorini were seen to be red. Irrigation of pheno-salyl, six per milligramme, were employed. By posterior rhinoscopy it was proved that there was no wound of the Eustachian tube. Possibly the otitis was to be attributed to the nasal douches employed. He referred, however, to Ziem's experiments, which proved that fluid could not be forced into the tympanum unless there was a counter-opening in the membrane. [He omitted to add Ziem's further observation that this rule did not apply to liquids mixed with air in a sort of froth, on which account Ziem recommended an air-tight nozzle for the douche.—D.G.]

Mr. BABER (Brighton) mentioned the danger of using a nasal douche if the opposite nostril was blocked by a deviation of the septum.

Dr. C. DELSTANCHE (Brussels). *Remarks on the Employment of Liquid Vaseline in the Treatment of Affections of the Middle Ear.*

Since employing these in acute cases he had become less and less in a hurry to perform paracentesis. Prof. Habermann had taken up the method, employing up to fifty centigrammes at a time. Out of thirty cases, this otologist had noted great improvement in twenty-two, tinnitus relieved in eighteen, vertigo much diminished in nine. The treatment was indicated in serous, not in sclerotic, catarrh. He quoted Politzer as considering massive injections of vaseline quite innocuous. He introduced the liquid vaseline through a catheter by means of a well-fitting syringe, and followed this up by an air-douche. The vaseline had to be chemically pure or sterilized by boiling. He did not consider the addition of iodoform necessary, but when added there was no need for it to be dissolved in ether. To objectors he stated that it had been proved that liquids could be driven into the tympanum (without counter-opening) if they were mixed with air.

Dr. SUNE Y MOLIST (Barcelona) valued the method highly.

Dr. SECRETAN (Lausanne) thought the quantity of fluid injected should be very limited.

Dr. DUNDAS GRANT (London) said he had found the method surprisingly beneficial, as had also his fellow-countryman, Dr. Adolph Bronner. Dr. Grant employed it in the manner described by Dr. Delstanche—went still further in driving it into the tympanum through a Weber-Liel's intra-tympanic catheter so as forcibly to break down certain adhesions. As regards so-called sclerosis of the middle ear as a contra-indication, there were certain cases in which the diagnosis of sclerotic otitis was perfectly clear and the patient should be spared all treatment, and there were others of equally unmistakable exudative otitis in which active treatment was imperatively called for. There were, however, many cases of an intermediate class where treatment was

experimentally justifiable, and the treatment of all others which deserved the best trial was that introduced to us by Dr. Delstanche.

Dr. HELME (Paris) asked if it was meant that this treatment was a substitute for paracentesis.

Dr. BRIEGER (Breslau) said there was no need to sterilize the vaseline. Reaction was only produced by traumatism or excess in the quantity of liquid.

Dr. MADEUF (Paris) employed solid vaseline in preference to the liquid.

Prof. POLITZER said a case of ankylosis of the stapes had been reported as having been cured by this method. He thought it necessary to distinguish sclerosis more accurately, and he admitted the beneficial effects of the treatment in non-sclerotic cases.

Dr. DELSTANCHE did not say this treatment was to take the place of paracentesis, he only stated that since he had adopted it he had taken to postponing paracentesis longer and longer. He gave up solid vaseline on account of its inconvenience as soon as liquid vaseline came into use.

Dr. MCNAUGHTON JONES (London). *On the Relation of Turbinal Hypertrophy to Deafness, with special reference to the Operation of Turbinotomy.*

The writer advised the use of this operation in selected cases, but protested against its indiscriminate practice in view of its limited usefulness, the risk from hæmorrhage, the possibility of septic disturbance, and the damage to the organism accruing from the removal of an organ having important physiological functions. In 300 cases of aural disease, 231 had no turbinal hypertrophy or nasal obstruction of any consequence. He attributed the turbinal hypertrophy in the remainder to the naso-pharyngeal catarrh, which was at the same time the cause of the concomitant aural disease. When once the turbinal had got so enlarged as to obstruct nasal respiration, he thought it became a further source of danger to the ear. In by far the majority of cases he considered the galvano-cautery, caustics and astringents as sufficient, especially if the treatment was followed up by the use of bougies, of which Dr. Jones showed some very smooth pliable forms. When these means were unavailing turbinotomy was indicated, but this could occur in relatively a very small proportion of aural cases.

Prof. GRADENIGO asked what kind of instrument was employed.

Dr. MCNAUGHTON JONES promised to exhibit it the following day.

[The instrument shown was not the ring-knife or "spoke-shave" devised by Mr. Carmalt Jones, and so well known, but a sort of guillotine, very much like the French tonsillotome, but with grasping blades instead of a fork, and adapted to fit the turbinal. Dr. McNaughton Jones said it removed only the soft parts.—D. G.]

Dr. DUNDAS GRANT said he had performed the operation in a number of cases, though not nearly so often as his colleague, Mr. Carmalt Jones, to whom we were indebted for a very handy modification of an instrument employed by Mr. Spencer Watson. He had had no injurious effects, but he felt that there was a great temptation to make

too frequent use of it. In regard to the use of the operation on account of deafness, he thought a good rule was to perform it only if it was called for on account of nasal obstruction, apart from the deafness. There was every reason to believe that in congestion of the middle or even of the internal ear bleeding from the turbinal effected a beneficial depletion. He regretted that Prof. Cozzolini was not present to give the results of his experiments on "nasal manometry in relation to manometry of the ear," from which important indications concerning nasal operations for aural disease might be expected.

Wednesday, September 25th. Morning Meeting.

Dr. DELSTANCHE in the Chair.

Prof. KIRCHNER (Würzburg). *A Case of Sarcoma of the Petrous Bone.*

The case was originally one of chronic suppurative inflammation of the middle ear, which eventually called for mastoid operation. When the process was opened it was found to be occupied by a tumour obviously of malignant nature, and a probe passed to the depth of five or six centimètres. Death occurred six weeks later, and it was found that the whole temporal bone was embedded in a growth of cheesy consistency from which it could be cut out by means of a knife without chisel or saw. Microscopically it was seen that the growth had originated in the mastoid cells, that it was a sarcoma, and that it had developed on a ground-work of chronic suppurative inflammation, as Prof. Kirchner had found in two previous cases.

Profs. FERRERI and GRADENIGO and Dr. BRIEGER described similar cases.

Dr. GELLÉ asked if the glands were affected.

Dr. MOURE mentioned two cases, in one of which facial palsy was absent entirely, and in the other until nearly the very end.

Prof. POLITZER recalled a case published by him in which sarcoma, commencing in the mastoid, extended to the middle ear, then through the internal meatus to the brain.

Dr. SUNE Y MOLIST had observed one in which the sarcoma, commencing externally, extended inwards to the cerebellum, and caused vertigo and facial paralysis.

Prof. KIRCHNER replied that the glands were not affected.

Dr. THOMAS BARR (Glasgow). *Introduction to the Discussion on the Treatment of Intra-Cranial Abscesses following Purulent Disease of the Middle Ear.*

We are able to reach and deal successfully with the following conditions :—

1. Abscess in the cerebrum, especially in the temporo-sphenoidal lobe.
2. Abscess in the cerebellum.
3. Purulent formations at the base of the skull, either (a) between the

bone and the dura mater (the so-called extra-dural abscess), or (b) between the dura mater and the surface of the brain (the sub-dural abscess).

4. Infective thrombosis of the sigmoid sinus even when secondary foci may exist elsewhere.

Preliminary Opening of the Middle Ear.—In many of these conditions we are able to reach the abscess most conveniently from the cavities of the middle ear; in others, we can deal with it more satisfactorily through a trephine opening in the lateral wall of the skull, above or behind the middle ear.

In *all* of these conditions it is essential, as a preliminary operation, to explore the cavities of the middle ear by removing the outer wall of the antrum. With the cavities of the middle ear thus opened, we ought to scrutinize with a good light and a reflecting mirror the bony partition which separates the tympanum and antrum at their roof from the dura mater, as well as (and this is perhaps more important still) the bony partition of the sigmoid groove. The existence of a carious aperture of an exposed dura mater or sigmoid sinus or of granulation tissue sprouting from these, will regulate our further procedure. The partitions of the roof and sigmoid groove, separating the middle ear from the temporo-sphenoidal lobe above, and from the sigmoid sinus behind, are without doubt the two great pathways by which the infective matter effects its fatal entrance to the interior of the cranium. Fortunately, they are both accessible, and readily accessible, from the middle ear spaces, and by the preliminary and essential operation of opening these spaces we are able to remove the pus, the cholesteatomatous matter, the granulation tissue, the carionecrotic *débris*, and the pathogenic organisms from the antrum and attic, these primary and dangerous formations (the “dynamite” of Prof. Macewan) which bring the patient’s life into peril.

Modes of operating—The rotating bur. In the presence of symptoms pointing to abscess, meningitis or septic thrombosis, we must now from the middle-ear spaces boldly and without hesitation open these vulnerable and bony partitions and *follow up the path of invasion*. This is done with great safety and efficiency by means of the rotating bur propelled by a dental engine, supplemented by the use of a good sharp gouge. In exposing the cavities of the middle ear as well as in opening these lethal partitions, Dr. Barr now rarely uses the chisel and mallet, since Prof. Macewan directed attention to the globular dental bur which, with the help of a gouge, he finds more safe and satisfactory than the chisel and mallet. [The burs and temporal bones demonstrating their effects, both on the normal and diseased bone, exhibited.] In employing this method of breaking down bone it is very important to use burs which are very hard and sharp, and those made at Philadelphia are much the best. A dental engine of considerable power, worked with the foot, is required; the hand-piece is held like a pen, and the lateral part of the bur is applied to the bone, which, as the bur rapidly rotates, is raised in flakes. To prevent excessive heat developing, as well as to allow inspection of the parts, the bur should be momentarily removed every few seconds. It is possible with this instrument to avoid any structure in however close proximity it may be. As Prof. Macewan observes: “Dark apertures or

"a membrane—such as a pyogenic membrane, or the sigmoid sinus, or dura mater, are readily seen on the white-polished surface made with the bur." By this mode of operating, even although there be an abnormalty in the relative positions of the interior of the cranium to the middle-ear spaces—such as unusual depth of the middle fossa (brachy-cephalic skulls) or an unusually anterior and outward position of the sigmoid fossa—the dura mater or lateral sinus need not be injured, although exposed. When we are working deep in the bone, and especially if the osseous tissue is soft, a sharp gouge yields effective aid, while a mirror on the forehead, reflecting good light into the deep cavity, is essential to safety. By simple and judicious extension of the operation for exposing the cavities of the middle ear, familiar to all of us, we can, in many cases of intra-cranial complication from purulent ear-disease, reach the seat of mischief and deal satisfactorily and safely with it—and in *all cases* such exposure of the middle ear (antrum and attic) with opening of the cranial septa should take place before proceeding to the use of the trephine.

Extra-Dural Abscess.—Having broken down the cranial partitions, we shall find, in a certain proportion of cases, pus between the dura mater and bone, the extra-dural abscess, in one or other of the vulnerable situations. Above the tegmen antri, or tegmen tympani, pus is often found extra-durally, the removal of which, without going deeper, brings about the disappearance of grave symptoms. Such extra-dural formations may be the precursors of temporo-sphenoidal abscess, just as similar formations at the sigmoid groove often lead to septic thrombosis of the lateral sinus, general septicæmia, or cerebellar abscess. Operations for the removal of extra-dural abscess have been singularly successful, and during the last seven years thirty-nine cases have been reported of extra-dural abscess, either at the tegmen or at the sigmoid groove, operated upon and followed by recovery.

Septic Thrombosis of Sigmoid Sinus.—Extra-dural abscess in the situation of the sigmoid groove is generally associated with septic thrombosis in the sigmoid sinus—hence in all such cases the sinus should be carefully examined. If it is found to be occupied, as it generally will, be by a thrombus, and if symptoms exist pointing to disintegration of the clot and general septic infection, the blood current, if still flowing through the sinus, should be stopped in order to prevent further systemic infection. This is achieved either by ligature of the jugular vein in the neck, as first proposed by Victor Horsley, or, as advocated by Macewan, slitting up the freely exposed sinus, removing the septic thrombus, stuffing with iodoform gauze, and by pressure bringing the outer wall of the sinus into contact with the inner, thus obliterating the venous tube. If there is reason to believe that the sinus is quite occluded, and the circulation entirely checked, the simple application of antiseptics and pressure may suffice. In the hands of Victor Horsley, Arbuthnot Lane, Ballance, and others, the operation of ligaturing the jugular vein in two places and cutting between has proved very satisfactory, and there are now thirty-six recorded cases of successful operations where septic thrombosis and general infection existed.

Operating upon Intra-Dural Abscess. — Further exploration, by

opening the dura mater at the tegmen of the middle ear or behind the sinus, will depend upon the symptoms, as well as the conditions, found present. In the presence of symptoms of lepto-meningitis, such extension of the operation may reveal purulent formations between the dura mater and brain in one or other of these localities, the removal of which may save the patient. No doubt the purulent exudation in such cases is generally too diffused to be susceptible of thorough removal, and these are certainly the least hopeful of all intra-cranial complications in ear disease, yet the experience of Prof. Macewan and others has shown that localized purulent collections in lepto-meningitis may be removed, with the result of saving the patient's life. If granulation tissue be seen protruding from the exposed dura mater, careful inspection should be made, when a sinus may be found leading into the arachnoid cavity. The discovery of such a sinus would call for the free opening of the dura, and in the event of purulent formation, with perhaps ulceration or erosion of the surface of the brain being found, thorough cleansing and antiseptic treatment of the interior would give the patient a chance, as shown by the fact that sixteen cases of success are recorded of operations for the relief of purulent collections due to lepto-meningitis.

Cerebral or Cerebellar Abscess.—In the presence of symptoms pointing to abscess in the temporo-sphenoidal lobe, or in the cerebellum (and the diagnosis of an uncomplicated abscess in the temporo-sphenoidal lobe may be said now to belong to the region of certainty), no time should be lost before we open the abscess cavity by means of a canula and trocar or hollow needle, remove its contents, and, as far as possible, cleanse and disinfect the interior. In dealing efficiently with such abscesses in the temporo-sphenoidal lobe, or in the cerebellum, a trephine opening is required in the lateral part of the skull above the ear, or, in the case of the cerebellum, behind the sigmoid sinus. In the case of temporo-sphenoidal abscess, we might, no doubt, by simply increasing, with the bur in an outward direction, the size of the opening in the tegmen, reach, evacuate and drain the abscess very thoroughly, and such an enlarged opening it would be well to make in any case. Yet it is found that, in order to get rid of the sloughs of brain tissue, loaded with septic organisms, generally found in such abscesses, a trephine opening through the wall of the skull, of half an inch diameter, is also required in addition to the opening connected with the middle ear.

Mixed Cases of Intra-cranial Disease.—Prof. Macewan believes that "in uncomplicated abscess of the brain, operated on at a fairly early period, recovery ought to be the rule."¹ It is to be remembered, however, that many cases are of a mixed character. We often have abscess formation in the brain, with lepto- or pachy-meningitis, or with septic thrombosis of the lateral sinus, or the whole of these conditions may exist at the one time in the same patient. If lepto-meningitis exists along with abscess in the brain tissue, the symptoms of the latter are masked by those of the former, and we are apt to conclude that we have to deal with a pure meningitis, and decide against operation. My

¹ Prof. Macewan in the work "Pyogenic Infective Diseases of the Brain and Spinal Cord," 1893.

experience, however, would incline me to the view that although the symptoms may be those of lepto-meningitis, our duty is to expose the middle and posterior fossa of the skull, and search for pus. A few weeks before leaving Glasgow, Dr. Barr had a case in point. A woman, twenty-eight years of age, had suffered from a purulent disease of the right middle ear from early childhood. In the month of July she was seized with symptoms of intra-cranial mischief, there were vomiting, intense pain all over the head, rigors on three occasions, persistently elevated temperature, quick pulse, delirium with unceasing movement, and entire absence of sleep. In fourteen days from the apparent commencement of the intra-cranial mischief, these symptoms terminated in death. Immediately after seeing her for the first time, he opened the cavities of the middle ear with the bur, removed foetid purulent matter and inflammatory *débris*, and also exposed the dura mater at the roof of the antrum, as well as the wall of the lateral sinus. (These openings were shown in the patient's temporal bone, illustrating also the efficiency of the bur.) There was no thrombosis of the sinus, and no pus between the dura mater and bone in either situation. As the symptoms did not seem to point to abscess in the brain, but rather to meningitis, he proceeded no further. On examining the interior of the skull after death, while he found extensive lepto-meningitis on both sides with lymph and purulent deposit, there was likewise an abscess in the temporo-sphenoidal lobe, the pus from which had partially made its way through two perforations in the base of the lobe into the middle and posterior fossa, and also into the spinal canal. From the thickness of the pyogenic membrane lining the abscess, there was reason to believe that the abscess had existed for a considerable time before the onset of the symptoms of intra-cranial mischief, and that the lepto-meningitis was really set up by the escape of the pus into the sub-dural space. While the trephining of the skull would not have saved this patient at the time she came under his observation, it would perhaps, from the surgical point of view, have been more satisfactory had the collection of pus been exposed, and drained as far as possible. It is even conceivable that, at a very early stage of the symptoms the meningitis might have been checked, and the patient's life saved by the thorough removal and drainage of the contents of the abscess, and the antiseptic treatment of the affected parts. The present trend of surgical opinion is therefore that we shall rarely go wrong if in the presence of grave intra-cranial symptoms, evidently due to a chronic septic process in the middle ear, we explore the various pathways by which the disease invades the interior of the skull, and, if no extra-dural collection be found, or when found, if its removal be not followed by marked improvement, we open the dura mater, examine the sub-dural space, and even then if the results be negative, we need not hesitate to explore the temporo-sphenoidal lobe or cerebellum, or both.

The record of work during the past seven years in the operations for cerebral and cerebellar abscess has been remarkable. At least fifty-nine cases of cerebral abscess and seven cases of cerebellar have been successfully treated. Many of these were associated with septic thrombosis of the sigmoid sinus, some with meningitis.

The Brilliant Results achieved.—In the various medical journals there have been reported, in the last seven years, records of one hundred and fifty-eight cases in which operations, followed by complete recovery, have been performed for the relief of the intra-cranial complications of purulent ear-disease. We are justified in believing that, in addition, there have been many unrecorded cases. Dr. Barr knew himself of some such cases. Our great aim and object should be to avert these dire results of purulent ear disease. By the enlightenment of the general public, through the fuller education of the profession in the gravity of those affections, by instructing the profession in the rational treatment of those affections, and by the development of those operative procedures calculated to remove hitherto intractable forms of purulent disease of the ear, we may in the future to a great extent prevent these intra-cranial complications. Indeed, the time will soon come, when, with few exceptions, every purulent affection of the ear will be within the curative resources of our art.

He offered the following questions for discussion :—

1. Is it desirable that the pure otologist should himself operate on the skull and brain in these intra-cranial complications of ear disease?
2. Should the interior of the cranium be opened even when the symptoms point to diffuse meningitis?
3. What is the best method of dealing with a thrombosed lateral sinus—ligaturing the internal jugular, or incision and pressure?
4. What is the best method of perforating the bone while opening the cavities of the middle ear, or the cranial septa of the middle ear?
5. The value of operative treatment on the cavities of the middle ear for the cure of intractable purulent cases as preventive of intra-cranial abscesses.

Prof. GRADENIGO (Turin) referred to the great progress that had been made in regard to the diagnosis of these affections and to the fixity of the "normals" for operative interference. He insisted on the necessity for the publication of *all* cases, both good and bad. Out of sixty-eight cases of aural disease calling for operation this year, twelve required intra-cranial measures. Two cases of cerebral abscess recovered and two of cerebellar abscess died. He thought the aurist should be the operator and that operation should be performed even in cases of meningitis. The diagnosis of sinus phlebitis or of cerebral abscess was always possible, that of cerebellar abscess was not. In operating, he considered it undesirable to use the mastoid opening to get at the inside of the skull.

Dr. URBAN PRITCHARD (London), in reply to the question as to whether the aurist should operate, gave it as his opinion that an operating surgeon should act with him. In case of supposed diffuse meningitis it was right to operate. As regards the instrument to employ, he had hitherto made use of the gouge, but he thought the burr was the instrument of the future.

Dr. BOBONE (San Remo) described a case in which the symptoms called for opening of the mastoid, where nothing was found, and also of the sinus with the same result. Cerebral abscess was sought for and not found. Finally, on *post-mortem* examination, an abscess was found in the opposite cerebral hemisphere.

Prof. POLITZER remarked that in some cases there were marked symptoms with no abscess, and in others abscess with no symptoms. Sometimes there were two abscesses. Fixed pain as a symptom was sometimes deceptive. As regards results of operation, some which had been published as cures were not permanent. He knew one in which death took place two years later from a fresh abscess. The operative treatment of sinus phlebitis was most promising.

Dr. BRIEGER mentioned, as one step in advance, the lumbar puncture of the spinal canal for the detection of meningitis. If meningitis was thus detected, operation should be avoided. Operation when indicated should be carried out by the mastoid opening, but by means of an osteo-plastic flap which could be returned to its place if required. The prognosis should always be guarded. In one case of cerebral abscess successfully treated, death took place from cardiac failure five months later, without anything being found to account for it. He thought it was perhaps to be attributed to toxines. Even in cases of phlebitis of the cavernous sinus operation was possible, and in one case he had seen all the symptoms disappear after exploratory incision. In another case with symptoms of cavernous sinusitis, the lateral sinus was operated on. After death the cavernous sinus of the same side was empty, but the opposite one was occupied by an old clot. The lateral sinus of the original side contained an old clot within a recent one.

Dr. GORIS (Brussels) narrated a case of meningitis in which the disease was quite localized. In two other cases there were symptoms of meningitis; the patients were apparently moribund and could only be roused by loud shouting. After death no diffuse meningitis was found. He argued, therefore, for operation in spite of meningitic symptoms being present.

Dr. MORPURGO (Trieste) said the otologist ought to be able to carry out the whole series of operations, and expressed the opinion that many operating surgeons were unequal to the occasion. In private practice it was inevitable that operation was postponed longer than in hospitals, to the consequent detriment of the patient and to the chance of cure. He held that in all large towns there ought to be hospitals in which private cases, when acute and dangerous, could be treated operatively by the aurist.

Mr. BABER (Brighton) stated that this was the case in England.

Prof. GRADENIGO expressed his opinion that the aurist ought to be the operator. As a rule, he held that ligature of the jugular was not required, and that even an incision was unnecessary, unless there was evidence of sepsis. He maintained his opinion that cerebral abscesses should be reached directly through the cranium, and not through the tegmen tympani.

Dr. HEYMANN (Warsaw). *A Case of Cerebellar Abscess.*

This was the seventh case Dr. Heymann had had the opportunity of watching. It was that of a soldier, with meningitic symptoms—vomiting, vertigo from right to left, perforation of the right tympanum, and preservation of bone-conduction. He made a diagnosis of cerebellar abscess, but the operator declined to carry his exploration beyond the tempero-

sphenoidal lobe. Temporary improvement followed the exploration, but cough and bronchitis ensued, and the middle ear was cleared out. An antisyphilitic treatment was then insisted on, and some improvement as regards equilibrium ensued, but the headache persisted, although varying in position. The cerebellum was later explored (incompletely?), and no pus was found. Next morning the patient felt better, but he got weaker and died. On *post-mortem* examination the right lobe of the cerebellum was found full of pus. Dr. Heymann thought this abscess must have been in existence for two years.

Dr. ST. CLAIR THOMSON (London). *On Antiseptics in Intra-Nasal Surgery.*

The writer drew attention to the bacteriological investigations carried out by himself, along with Dr. Hewitt, with regard to the absence of bacteria in the nasal mucus beyond the vestibule, and also to the effect of any foreign body in causing an increased flow of bactericidal mucus, and in exciting ciliary action for its own expulsion. Chemical antiseptics in the nose were therefore unnecessary and injurious, and in nasal operation all that was required was the disinfection of the finger when introduced into the naso-pharynx, and the sterilization of the instrument in a one in twenty solution of carbolic acid. He considered the precautions recommended by Drs. Lermoyez and Helme as needlessly complex.

Wednesday, September 25th. Afternoon Meeting.

DISCUSSION ON DR. ST. CLAIR THOMSON'S PAPER.

Dr. HELME (Paris) said that the precautions referred to were really very simple, however complicated they might seem, and they were nothing more than was necessary to protect them against the criticisms of operating surgeons.

Prof. GRADENIGO (Turin) thought the difference between the normal and the diseased nose in relation to the bactericidal action of the nasal secretion was not sufficiently kept in view. They reacted very differently to galvanic cauterization. The main point to be attended to was the sterilization of instruments.

Dr. BRONNER (Bradford) insisted that all instruments should be boiled, and that plugging the nose should be avoided.

Dr. BRIEGER (Breslau) said that only very small portions should be removed at a time, so as not to diminish too much the amount of surface secreting bactericidal mucus.

Mr. CRESSWELL BABER (Brighton) considered it impossible to keep wounds in the nose aseptic; in cleansing he recommended a 0.7 per cent. solution of chloride of sodium.

Dr. DUNDAS GRANT declined to be tied by a hard and fast rule with regard to irrigation and plugging. He strictly avoided plugging, except when necessitated by hæmorrhage, and he likewise avoided syringing,

except when an accumulation of purulent secretion likely to afford a nidus for saprophytic, or even pathogenic, organisms called for its use. In such cases he employed a coarse spray or a douche with a very fine india-rubber tip, such as would allow free egress for the fluid.

Dr. DALY (Pittsburgh, U.S.A.) believed in rendering the parts aseptic before operation by thoroughly cleansing them and then spraying them with a 1 in 5000 solution of corrosive sublimate. After the operation he introduced a platinum splint, covered with cotton-wool and moistened with a mixture of oil of eucalyptus (one part), oil of tar (one part) and compound tincture of benzoin (four parts), which he left *in situ* for a number of days.

Dr. ST. CLAIR THOMSON pointed out that Drs. Lermoyez and Helme allowed that chemical antiseptics, such as a one per cent. solution of pheno-salyl, were sufficient for the sterilization of those instruments which would not stand boiling. He contended, therefore, that logically, if they were sufficient for some, they were sufficient for all. In regard to the question of plugging, a strong argument against it was the fact that the pathogenic microbes grew more readily when air was excluded.

Prof. POLITZER. *On the Pathological Changes which Occur in the Labyrinth.* (Vide p. 795.)

This valuable communication contained a general account of the present state of knowledge as to the forms of disease to which the labyrinth was subject, and was illustrated by the records of cases, with the demonstration of the sections made after death. The fullest descriptions were those of labyrinthine disease due to suppurative inflammation of the middle ear and to malignant disease inside the skull, the ossific changes and the narrowing of the vessels occurring in syphilis—the detection of Heubner's changes in the vessels of the labyrinth having been made by Kirchner. Tuberculosis primarily affecting the labyrinth had not yet been seen. Prof. Politzer had demonstrated last year at Rome the "chronic capsulitis" of the labyrinth, leading to obliteration of the fenestra ovalis, which occurred in sclerosis of the middle ear, and was clinically recognized as such. He was prepared to believe that in time the term "sclerosis of the middle ear" would give place to that of "chronic capsulitis."

Dr. MOURE (Bordeaux). *A Case of Aural Polypus, with Hæmorrhage.*

In this case the polypus was of ordinary appearance, but with a little granulation on its surface. On manipulation it gave vent to such a violent hæmorrhage that repeated plugging with iodoform gauze was necessary, and led to the question as to whether the bleeding might not arise from aneurism of the jugular vein. On complete removal the growth was found to be in part a cavernous angioma.

Dr. DE ROALDES (New Orleans). *A Preliminary Note on Certain Peculiarities of the Negro in Otology.*

The writer's statistics showed that, as compared with the white races, the negroes were singularly free from sclerosis of the middle ear and from deafness in general. Among them the percentage of deaf-mutes was

only half as large as among the whites. The nasal and naso-pharyngeal cavities were much wider, as also were the external auditory meatuses. There was, therefore, a relatively greater liability to the entrance of foreign bodies and insects.

Dr. MADEUF (Paris) asked if the negroes observed by Dr. de Roaldes slept on their backs on the ground. That attitude was favourable to the freeing of the naso-pharynx from nasal secretion.

Dr. HELME (Paris) inquired if they were subject to adenoids.

Mr. BABER drew attention to Catlin's observation that the American Indians were most particular to breathe through the nose only, and that they were singularly free from many diseases to which mouth-breathers were liable.

Dr. DE ROALDES replied that in towns the negroes lay just like Europeans, but that in the country it might be different. Adenoids occurred in negroes, but owing to the great capacity of the cavities their effects were seldom pronounced.

Dr. SUNE Y MOLIST (Barcelona). *On Certain Peculiarities of Wounds from Firearms in the Mastoid Region.*

The usual results are: firstly, the projectile fractures the bone into splinters; secondly, the ball does not usually penetrate, and is easily extracted; thirdly, the patient has signs of commotio cerebri. Before the healing of the wound the noises and deafness disappear. It is the structure of the temporal bone which prevents the penetration of the projectile, the petrous bone acting as a stout wall, while the flexible walls of the mastoid cells act as a soft cushion, and check the velocity of the projectile.

Dr. MORPURGO narrated a case in which the wound was followed by facial paralysis. A solid body was felt in the bottom of the opening, but there was great doubt as to its nature. The patient was unconscious for forty days. After between two or three months an abscess formed under the auricle, and on incision it was found to contain the bullet.

Prof. AVOLEDO (Milan) referred to the medico-legal interest attaching to these cases in view of the distinction between suicidal cases and those homicidal ones in which the murderer pretends that the victim has shot himself.

Thursday, September 26th. Morning Meeting.

Prof. KIRCHNER in the Chair.

Prof. POLITZER (Vienna). *Anatomical Demonstrations.* Among other interesting preparations were a skull, showing the position of the *membrana tympani* and of the *Eustachian tube*. Two temporal bones with *dehiscences in the squamous portion*.

Also bones showing the openings produced in Stacke's, Schwartze's, and Koerner's operations.

Prof. MASINI (Genoa). *The Influence of Lesions of the Organ of Hearing on Respiratory Changes.*

Recognizing the probability from previous experiments that the irritation of one of the bulbar centres might extend to those about it by radiation, the author, along with Dr. Polimanti, thought the lesions of the auditory apparatus might influence certain of these centres. They commenced with the study of the respiratory centre, and came to the conclusions: (1) That in reality partial or total lesions of the organ of hearing could produce permanent functional disturbances in the bulbar centres. (2) That these disturbances are greater in case of partial than of total lesions. (3) That their intensity corresponds with the gravity of the disorders of equilibrium and of movement.

After the removal of the semi-circular canals in animals, there followed a loss of equilibrium in the elimination of carbon dioxide, which diminished. On the other hand, lesions of the cochlea could not be shown to have any influence upon the elimination of this gas.

Dr. CHIUCINI (Rome). *A Method of Anatomical Section of the Temporal Bone, with Demonstration.*

The sections were made in various directions so as to exhibit with the utmost ease the various parts of the temporal bone, and the important osseous structures and relations of the organ of hearing. The portions were fastened together by means of delicate hinges, so that they could be opened out and closed together again like the leaves of a book.

Mr. CRESSWELL BABER (Brighton). *Phantoms for the Study of Post-nasal Palpation.*

By means of these, the student may rapidly acquaint himself with the digital topography of the posterior nares, and get a very fair idea of the "feel" of the parts in health and disease.

Dr. CARLO SECCHI (Bologna). *On the Physiology of the Middle Ear.*

The author referred to views he had previously expressed with regard to the intra-tympanic pressure, which he held to be higher than the atmospheric. He considers the tympanum to act like a Marey's tambour—a capsule filled with air, which, expanding equally in all directions in obedience to Pascal's law when compressed from without, communicated vibrations to the fenestra rotunda primarily. The ossicular chain had not been proved to be the conductors of sound, and their function was of only secondary importance—namely, as a mechanism of accommodation. By means of a manometer in connection with the cavity of the middle ear of a dog, he demonstrated a rise of intra-tympanic pressure under the stimulus of a whistle or other sound.

Dr. MONGARDI (Bologna) held that Dr. Secchi's opinion that the ossicles took no part in the conduction of sound was incorrect, in view of Muller's experiments repeated by himself, in which an artificial tympanic apparatus without ossicles was found to conduct very imperfectly when compared with what it did when ossicles were adapted to it.

Dr. GELLÉ protested against the rash interpretation of observations on a moribund dog in a sense opposed to the views regarding the ossicles so long held and so strongly confirmed by clinical and other facts.

Dr. DUNDAS GRANT considered, as an argument against the uncompromising acceptance of Dr. Secchi's view that the tympanum acted as a tambour, the very fair degree of hearing often existing in spite of the presence of a perforation when the "air-capsule" action must be impossible and conduction must, in great measure at least, take place through the chain of ossicles. On the other hand, he thought there was much in favour of Dr. Secchi's contention that the intra-tympanic pressure was greater than that of the atmospheric, and cited an instance in which he saw a cicatrix bulge out distinctly during deglutition. This did not prove that swallowing always caused a distension of the tympanum, but it proved that it *could* do so, although the opposite effect was much more frequently observed. There was, in his opinion, a good deal still unknown with regard to the physiology of the middle ear.

Prof. POLITZER considered the ossicles the primary means for the conduction of sound vibrations, and the intra-tympanic air and fenestra rotunda only secondary. He considered experiments on the cadaver extremely valuable.

Prof. GRADENIGO expressed his admiration for the industry and skill with which Dr. Secchi had worked out the experimental evidence in support of his views.

Dr. SECCHI repeated his conviction that in time his views would receive acceptance, and that at present there were some gaps in our knowledge of the functions of the middle ear.

Dr. A. D'AGUANNO (Palermo). *On the Paracsis of Willis.*

In general Dr. D'Agunno held that the conditions which brought about this symptom were relaxation of the ligaments or degeneration of the muscles of the tympanic ossicles.

Dr. VERDOS (Barcelona). *Aural Disturbances resulting from Explosions of Dynamite.*

The dynamite outrage in the Lyceum Theatre of Barcelona gave the writer the opportunity of studying the effects on the ear. He did not observe hæmorrhage from laceration of the tympanum, such as takes place from the firing of big guns. On the other hand, in those who were close to the bomb there was a violent hyperæmia of the auricle and of the temporo-mastoid region, the external meatus and the external surface of the membrana tympani, with propagation to the tympanic cavity. In four or five days the patients were perfectly well, and in all of them the lesion was unilateral. In none was there a perforation of the tympanum. In those who were at some distance there was no hyperæmia, but a distinct depression of the tympanum with tinnitus and slight vertigo. In them a recovery did not occur till from two to three weeks, and their lesions were bilateral. Those who were in the higher boxes of the theatre had labyrinthine symptoms which could not be ascribed to hyperæmia, but probably to an irritation of the acoustic nerves. A few experi-

enced some disturbance in their sense of position, which the writer attributed to inhibition of the functions of the auditory nerve.

Dr. LUBET-BARBON (Paris). *The Localization of Inflammation of the Temporal Bones in Relation to the Development of these Bones.*

The writer held that the inflammatory disease—especially when spontaneous—tended to limit itself to one or other of the segments of which the temporal bone was made up. Thus disease of the petro-mastoid portion did not extend above the temporal line, that of the squamous portion affected only the upper wall of the meatus, that of the tympanic portion expressed itself in necrosis of the postero-inferior portion of the meatus.

Prof. GRADENIGO (Turin). *On the Functional Examination of the Hearing Power.*

In view of the diagnostic value of the measurement of the hearing for notes in the different parts of the range, and of the auditory-field as tested by Zwaardemacher and by himself, Prof. Gradenigo sought a ready mechanism for this purpose. Pure tones were necessary, and they could only be elicited from tuning-forks. The difficulty with them was to get a constant initial intensity and spring-hammers did not enable us to effect this. He therefore had each tuning-fork mounted on a frame and adapted to it an apparatus like a fork which compressed the blades together. The lifting off of this allowed them to expand with a definite degree of force, and consequently to start vibrating with a constant intensity. Four degrees of compression could be effected so that four, degrees of intensity of tone could be produced. According to the degree required for the patient to hear it, the hearing power could be measured sufficiently near for all practical requirements, and the amount could be very simply expressed in numbers.

Dr. DUNDAS GRANT expressed his indebtedness to Prof. Gradenigo's writings for his appreciation of the value of tests for the hearing of tones in different parts of the scale. He thought the mechanism devised by Prof. Gradenigo would remove the difficulty they had all felt. The method originally practised by the professor, like that of Hartmann, consisted in placing the number of seconds the patient hears the fork as a numerator, and as a denominator the number it is heard by a normal person. If this is reduced to a percentage it can easily be shown that the values will vary according as the length of time of hearing by a normal person varies with the force of the blow. Dr. Grant suggested that Prof. Gradenigo's appliance could be regulated so that normally the fork should be heard *at a definite distance*. The *distance* at which the patient could hear might then be noted, and a ratio readily obtained in which the fallacy above mentioned was avoided.

Prof. POLITZER contended that the voice was the only test of practical value, and that all the other tests in use frequently gave totally different results from the vocal one.

Prof. GRADENIGO held that as the voice only covered from two to three octaves, it was necessary to make use of the more extensive scale afforded by the tuning-forks.

Dr. SIGISMUND SZENES (Buda-Pesth). *On Traumatic Lesions of the Organs of Hearing.*

Notes of this paper will appear later.

Prof. BARGELLINÉ. *Remarks on Therapeutic Points derived from a long experience.*

(Now, in the eighty-sixth year of his age, this *doyen* of Italian otology was a frequent attendant at the meetings of the Congress, where he received from his younger *confrères* and pupils the deferential ovation to which his fame entitled him, and which the sight of his striking and venerable appearance evoked.)

Among other contributions from his experience, he particularly dwelt on the value of local depletion by means of leeches, a mode of treatment of which he considered that the present generation of aurists made too little use.

Prof. V. GRAZZI (Florence). *A Case of Complete Deafness following Acute Meningitis with the Diplococcus of Fraenkel.*

In this case the patient, a young woman, had a feverish attack, which was attributed to diphtheria, but in which the secretion contained only Fraenkel's diplococcus. Well-marked symptoms of meningitis and complete deafness ensued. In two months she lost her memory for words, and became quite mute. Pilocarpin treatment was employed, but without avail.

Dr. CORRADI (Verona) had seen benefit follow the use of pilocarpin in syphilitic cases.

Prof. GRADENIGO alluded to the great difficulty in distinguishing abortive meningitis from inflammation of the labyrinth.

Thursday, September 26th. Afternoon Meeting.

Dr. MORPURGO in the Chair.

Dr. ADOLPH BRONNER (Bradford). *Local Massage in the Treatment of Chronic Eczema of the External Ear.*

Dr. Bronner had found this process successful in several cases, in which ordinary treatment had proved useless. The vibration may be produced by the hand, or by a machine (treadle or electro-motor). A thick silver probe is employed, with cotton wool twisted round the tip, smeared with a mercurial ointment. The vibrations should be rapid, about seven hundred per minute, continued for from one to five minutes. This has to be repeated daily till the skin is red and swollen, when it has to be omitted for a few days. As a rule, six or seven sittings are required.

In reply to Dr. DALY he stated that the ointment he employed was yellow oxide of mercury, gr. x ad. ʒj.

Dr. DALY (Pittsburgh) said he had had great success, even in obstinate

cases, with the following ointment :—Hydrarg, ammon.-chlor. ; hydrarg, sub-chlor., āā gr. j. ; “cold cream” ʒj. To avoid failure it should not be applied to a dry skin.

Dr. DELSTANCHE (Brussels) recommended his father's method of treatment, consisting of free washing of the part with acetate of lead dissolved in distilled water, followed by vigorous friction with the thumb and finger.

Mr. CRESSWELL BABER asked if the massage was beneficial in seborrhœa, and Dr. BRONNER replied that the best treatment was the use of nitrate of silver.

Dr. BRIEGER (Breslau) recommended the use of tampons retained for a long time.

Dr. V. GARZIA (Naples). 1. *On the Influence of Syphilis in certain Affections of the Ear.* 2. *Pedunculated Exostosis of the External Meatus.*

(Communicated for publication though not read.)

Dr. MADEUF (Paris). *On Affections of the Middle Ear in Mammals.*
This communication was not read.

Dr. DELSTANCHE (Brussels). *Demonstration of Instruments.*

An interesting account of Dr. Delstanche's well-known appliances.

The Closing Ceremonies took place in the Aula Maxima in the presence of several important representatives of the Authorities. These were followed by a most enjoyable excursion to Fiesole. In the evening the President took the chair at a magnificent banquet, to which were invited all the foreign members of the Congress and their ladies, as guests of their Italian *confrères*, doctors and citizens of Florence.

The generous hospitality offered on this occasion will not be forgotten in 1899, when the next International Congress meets in London.

SIXTH ANNUAL MEETING of the BELGIAN OTOLOGISTS AND LARYNGOLOGISTS.

Held at Brussels, June 16th, 1895.

President—Dr. HICGUET (of the Polyclinic of Brussels).

THE morning sitting was devoted to the presentation of patients and instruments, with demonstration of anatomical specimens.

Dr. CAPART showed an *Adenoid Tumour* and *two Tonsils* remarkable for their size, which he had removed by electrical means—Rousseau's

curette and galvanic loop. He presented two cases of *Naso-Pharyngeal Fibrous Polypi*, treated by electrolysis—in one of the cases this outgrowth could be perceived, and had persisted for a certain time after cure, and which has been described by Paul Bruns in the first work on “The Electrolytic Treatment of Naso-pharyngeal Polypi”; in the same case the observer could satisfy himself that the place of implantation of these tumours is not, as has often been maintained, the base of the cranium at the junction of the sphenoidal and occipital, but the internal surface and the base of the pterygoid apophysis. It is a singular thing that in fifty cases observed and cured during twenty years by Dr. Capart, the tumour was always situated in the same spot, and on the right, never on the left, side. The second case is equally interesting, first, from the fact that when the patient came to consult Dr. Capart, all the naso-pharyngeal polypus was sphacelated and emitted an insupportable gangrenous odour; it was easy to apply a loop and by exercising slight traction to obtain an enormous tumour of the size of a pear. A few injections completed the treatment, at the end of which there remained only a pedicle, which was cauterized on different occasions with the galvano-cautery. Unfortunately, the patient neglected his visits and a recurrence soon became manifest. Dr. Capart tried to remove the tumour at one sitting with the galvano-cautery loop, and succeeded in extracting a very large piece, but with formidable hæmorrhage, the patient being hæmophylic; then he commenced electrolytic treatment, the result of which, obtained in three sittings, can be seen. The patient can already breathe through the left nostril, the right side being still obstructed. One of the great advantages of this method is that it does not produce any hæmorrhage. Dr. Capart thinks that if this young man had been operated upon surgically, he would certainly have succumbed.

Dr. CAPART presented a patient operated upon by Dr. Dupage for *Cancer of the Pharynx* with very happy results; it is the second of a series of four individuals who have been operated upon by this surgeon for lesions nearly similar. Three are yet living, one succumbed on the tenth day after operation from cardiac asthenia (fatty heart).

Case 1. A man, fifty-two years of age, a warehouseman. *Epithelioma of the right tonsil*, of six months' duration, having invaded the lateral wall of the pharynx and part of the velum of the palate, glandular swellings from the parotid to the clavicle, operated upon November 10th, 1894; ablation of the glandular chain; ligature of the external carotid; resection of the lateral wall of the pharynx and of half of the velum of the palate by the method of Mickulicz, an extirpation of the submaxillary gland of the same side with the glands surrounding it; suture and tamponing of the wound, leaving the pharynx free; duration of the operation one hour and a half. The patient was nourished with the naso-pharyngeal tube. The sequelæ of the operation were simple, the temperature never exceeded 38°, the pulse was normal, every day there was fresh tamponing of the wound, avoiding antiseptic injections into the cavity; at the end of three weeks there was complete cure. The patient opens and shuts the mouth perfectly, swallows without difficulty, and masticates his food.

examination of the pharynx shows cicatrization to be perfect, and the velum of the palate to be formed. Analysis of the tumour, glandular cancer, with cylindrical epithelial cells.

Case 2. A man, fifty-three years of age, cachectic, with cancer of both tonsils, which had invaded all the posterior wall of the pharynx; no appreciable glands in the neck; operated upon February 13th, 1895. Preventive tracheotomy with the thermo-cautery, introduction of Trendelenburg's canula, ligature of the external carotid and ablation of the whole pharynx by the method of Mickulicz, taking care to detach the organ in its whole extent before opening it. Resection of the epiglottis; the superior laryngeal was cut during the operation. Introduction of an œsophageal sound through the wound; suture of the latter throughout its greatest extent and complete tamponing of the pharynx.

Sequelæ of the Operation.—Every day fresh tamponing of the pharynx; avoidance of antiseptic injections, but cleansing the cavity on each occasion by means of tampons soaked in sublimate. Trendelenburg's canula was changed once or twice daily. At the end of six days lobar-pneumonia on the right side, probably consecutive to influenza. Cure on the ninth day. Some days later intense diarrhœa, as many as fifteen stools a day. Cure at the end of four days. Afterwards purulent cystitis, resulting in stricture. Internal urethrotomy; cure of the cystitis. Meanwhile cicatrization of the wound went on in a regular fashion. Cure in six weeks. The general condition was greatly ameliorated. There was no deformity of the face; the patient opens the mouth perfectly, and can swallow liquid, semi-liquid, and even solid food. Examination of the pharynx shows cicatrization to be complete.

Case 3 (that of the subject presented to the meeting). A man, fifty-two years of age, with cancer of the lower part of the pharynx, the extension of which towards the œsophagus could not be determined by examination of the throat. Operation performed, March 25th, 1895. Preventive tracheotomy with the thermo-cautery; sub-hyoid pharyngotomy. On opening the pharynx it was found to be impossible by this passage to remove the tumour, which extended deeply into the œsophagus. From the first incision, a second was made along the right border of the larynx, which was laid bare and dislocated; the superior and inferior laryngeal nerves were cut; the right side of the thyroid gland was extirpated. The pharynx was laid bare and the œsophagus all round, the former being resected above the tumour; the latter was drawn outwards, and the healthy part of the œsophagus sutured to the inferior angle of the wound. The œsophagus was resected below the tumour; a drainage tube was inserted into the superior angle of the wound and conducted to the back of the mouth; the cavity was tamponed and an œsophageal sound inserted.

Sequelæ of the Operation.—Nourishment through the œsophageal sound; Trendelenburg's canula worn for fifteen days to three weeks; afterwards an ordinary canula, which is still worn in consequence of œdema of the glottis. Cicatrization of the wound, but persistence of a buccal fistula, allowing the saliva to flow. Later on, a canula was placed in this fistula, opening above into the back of the mouth, and continued

below into the œsophagus by a caoutchouc tube. With this apparatus the patient can swallow liquid.

The general condition of the patient is greatly improved.

Case 4. A man, fifty-three years of age, with an epithelioma of the size of a five-franc piece, situated in the upper portion of the pharynx on the right side.

Operation, April 12th.—Tracheotomy with the thermo-cautery; pharyngectomy by Von Langenbeck's method, *i.e.*, by making a vertical incision along the right side of the larynx, as in the preceding case; preservation of the laryngeals, ablation of the tumour, suture of the pharynx and introduction into the œsophagus of two sounds, of which one was conducted through the nose, and the other through the wound; tamponing.

Operative Sequelæ.—Slight attack of broncho-pneumonia on the second day, which disappeared rapidly; death on the tenth day from post-operative mania.

Dr. BAYER (Brussels) showed a case of *Lupus of the Nose, Lips, Superior Alveolar Ridge, and Larynx*; also a patient operated upon successfully by Stacke's method for *Otitis*, with *Otorrhœa complicated with Mastoiditis*.

Dr. HICGUET (Brussels) showed a child, seven years of age, with *Lupus of the Larynx in its initial period*, consecutive to a lupus of the cheek, which had been treated and cured. He also showed a child, four and a half years of age, who had come to the polyclinic with *Suppuration of the Attic* of several weeks' duration. The pulse was irregular and intermittent, and the general condition bad. There was vomiting, and there was every reason to suppose a meningeal complication. Fifteen days later there appeared swelling, with deep fluctuation over the posterior part of the mastoid apophysis, extending towards the occipital region. An incision made liberated a pretty large quantity of pus. Irrigations of the attic revealed some cholesteatomata. Fever was present, with a bad general condition. Two days later the incision was enlarged, so as to disengage the apophysis completely. The osseous wall gave way under pressure. There was revealed a large cavity, limited in front by an osseous wall, the base being composed of vegetations. Further treatment consisted in curetting, removal of a part of the posterior wall of the auditory meatus, frequent and careful washing and swabbing. In less than three months there was complete cure *in loco* of the mastoid wound, but there was a persistent discharge from the ear. The child's general condition and nutrition was so much improved that he was scarcely recognizable again.

Dr. BUYS (Brussels) showed a case of *Necrosis of part of the Occipital, consequent to a Mastoiditis*.

The patient, a man of seventy, came with a purulent otorrhœa and a mastoiditis, which had lasted for three weeks, and the origin of which was attributed to an acute median otitis. The intensity of the symptoms necessitated immediate intervention. The operator performed trepana-

tion, and opened a spacious cavity full of pus, and fringed with fleshy vegetations. He curetted and inserted an iodoform gauze drain. A few days after there was notable tumefaction under the apophysis, in the upper part of the region of the sterno-mastoid muscle; the pus had burrowed under the muscle, after having made an exit by a carious point within the point of the apophysis. It was necessary, in order to gain access to the *cul-de-sac* formed by the pus, to remove a large portion of the mastoid apophysis.

After this the patient's condition was greatly relieved; washing, injections of iodoform glycerine, and drainage, led, at the end of some weeks, to cicatrization of the lower part of the wound, but above and behind the pus continued to flow in abundance, and with pulsations isochronous with the pulse. A probe revealed the presence of caries. Dr. Buys made a new incision, which laid bare several sequestra, under which the dura mater appeared to be covered with vegetations.

From this time cicatrization progressed regularly, and now, three months after the last intervention, there is no more otorrhœa, the tympanum presents a small cicatrix of no importance, hearing is good (better than the other side); behind the ear a cavity exists, covered with epidermis, at the bottom of which there is a slight running, necessitating about every eight days the renewal of a plaster, which is the only dressing applied. The interesting fact of caries of a part of the occipital can only be explained in this case by a circumscribed purulent pachy-meningitis. The transverse sinus has probably not been attacked by the inflammatory process.

Dr. GORIS (Brussels) discussed *Radical Intervention in cases of Lupus of the Nose and Ear*.

The common treatment of lupus, consisting of scraping followed by cauterization (thermo-cautery, oxide of zinc), is in the great majority of cases insufficient, and followed by rapid recurrence. Dr. Goris prefers, when he is able, to proceed to extensive and deep extirpation of the tubercular neoplasm. He presented four cases operated upon by extirpation. Three were very old cases, the date of the origin of the disease being respectively twenty-two, twenty-five, and twelve years; one was comparatively recent, *i.e.*, one year; in three cases there coexisted lupus of the ear; amongst these he found one in which the operatory wound was covered with transplantations, which had grown perfectly; the fourth case was that of a patient presented two years ago to the Congress of Ghent, and in which the author, after having removed the lupus, had practised rhinoplasty. The patient has been without recurrence for two years. The author recommended extirpation, with or without autoplasty, or transplantations in lupus of slight extent; he recommended it particularly to be performed at the beginning, in order to avoid the great destruction which threatens to disfigure these patients.

Dr. WODON (Brussels) showed a case of *Tumour situated on the External Surface of the Nose*, painless, hard, and ulcerated.

Histological examination practised by Dr. de Rechter showed it to be

a lymphadenoid sarcoma (Rindfleisch). The author proposes to practise extirpation.

Dr. KOCH made the following communications through the President :

1. *Rare Anomaly of the Uvula.*

The patient had never complained of the throat. The uvula was lengthened so much that on pressing the tongue its inferior extremity was invisible. It was about four and a half centimètres in length. The author amputated a piece three and a half centimètres in length ; at the extremity was suspended a wounded tumour the size of a large lentil, of transparent white appearance. The author remarks upon the absence of symptoms, and the possibility of exaggerating troubles produced by chronic elongation of the uvula.

2. *A Case of Subglottic Polypus.*

The polypus was inserted under the left vocal cord, projected between the cords on forced expiration ; after several unsuccessful attempts, the author succeeded in seizing the polypus with Scheinmann's cutting forceps. Its size and hardness prevented him from amputating it. Eight days afterwards the patient returned with nearly normal voice and free respiration, stating that two days after the operation, while coughing, he had expectorated the polypus. Histological examination was impossible.

3. *Fibroma of the Larynx.*

The patient was a man, aged sixty-eight, whose symptoms of short breath and difficulty in swallowing had developed insensibly. The growth had originated in the left ventricle, and had developed an enormous size, completely hiding all the larynx below it (cords, bands, glottis). It was difficult to understand how the patient had been able to breathe under such conditions ; he had not, however, been able to swallow for several months. After having removed several small pieces of the fibrous growth, the author succeeded in introducing Scheinmann's cutting forceps between the growth and the left laryngeal wall and in cutting through the pedicle, which was hidden, and removing the whole tumour, the weight of which was 7·38 grammes.

4. *Chronic Essential Fibrinous Bronchitis.*

The author described two cases, both in married women, one aged sixty-three and the other thirty-two ; in both the affection was unilateral, not invading all the lung. The symptoms of auscultation and percussion are those of limited chronic catarrhal bronchitis, like those of obstructed bronchioles ; from time to time, intense paroxysmal cough occurs, accompanied with dyspnœa and cyanosis, ending in the expectoration of the pathognomic sputa, and in the author's patients disease had existed for years. In his cases iodide of potassium had no obvious effect.

Dr. BECO (Liège). *Adenoma of the Palatine Vault.*

The term adenoma is the old appellation under which tumours of the palate were described by Nelaton. The author recognizes that the term is inexact, or rather incomplete, for if the glandular element represents the

origin of the tumour, and constitutes a great portion of it, the connective tissue stroma participates in its structure, and on its proportion depends the integrity or degeneration of the constituent parts. These neoplasms ought to be denominated adeno-sarcoma, fibro-adenoma, adeno-chondroma, multiform sarcoma, adeno-myxo-chondroma, etc. These tumours are almost always mixed and analogous to parotid tumours, rarely being pure neoplasms. These growths originate during youth, from ten to thirty years of age; their progress is slow and their evolution is indolent. Functional troubles occur late at a variable epoch, according to their volume and situation. Under the influence of traumatism, or some unknown cause, they may grow rapidly, ulcerate and invade neighbouring organs after the manner of malignant neoplasms. So long as they remain torpid and encapsuled, their extirpation is generally easy and is not followed by recurrence; they almost always occupy the velum of the palate, much seldomer the palatine vault, generally they are situated on the left side. The cast presented by Dr. Beco was from a young girl, twenty-two years of age, who, two years previously, had remarked on the right side of the palate a little growth the size of a pea, which had gradually increased in size without provoking any pain or functional symptoms. The growth, the size of a prune, occupied the greater part of the palate, situated upon the right side; it had not deeply encroached upon the median raphé, the free part alone overhanging it, the posterior extremity descending from the inferior part of the velum resting perfectly isolated. The mucous membrane was normal, except for some large varicose vessels, directed in the long axis of the tumour; the centre was resistant; on the lateral portions were felt osseous nodules which encircled it in nearly every part; it was evident that the neoplasm instead of remaining in the region of the fibro-mucosa had involved the palate, of which it had raised and displaced the inferior layer. The inferior meatus of the nose on the right side was, however, absolutely free, there was a scarcely evident, slight and limited displacement of the floor of the nasal fossa. Posterior rhinoscopy revealed nothing abnormal. The tumour was removed under chloroform, the head being placed in a hanging position. The operation presented nothing of interest; there was extremely abundant hæmorrhage with the first cut of the bistoury, obliging the operator to rapidly tear off the neoplastic masses instead of performing methodical enucleation. This, however, would have been impossible, because the tumour extended much upwards and forwards—it had really extended between the two nasal and buccal layers of the palate, as could be seen in the second cast, taken eight days after the operation, when granulation had already commenced energetically.

After curettage, Dr. Beco pushed the thermo-cautery to the bottom of the excavation, and after having abundantly swabbed the parts with a solution of chloride of zinc, ten per cent., he inserted an iodoform gauze tampon. In three at the most the mucous membrane covered the site of the neoplasm, and the actual situation was sensibly the same as was represented in the second cast. The fragments of tumour had a granular and lobular appearance, quite resembling a section of the parotid gland or of an adenoid tumour of the larynx. The histological

examination, performed by Dr. Naloz, showed that the growth was an adeno-carcinoma.

According to the places examined were glands still normal, others very numerous and pathological, with many complete or irregular rows of flattened cells. The cavities were filled with colloid matter : in parts the gland was more malformed, almost unrecognizable and lost in an enormous cellular mass, which sent prolongations into the ambient connective tissue stroma. In other parts were islands composed exclusively of epithelial cells, circumscribed by connective tissue bands, and without limiting membrane.

Although the affection is a benign tumour clinically, the growth is histologically a cancer.

Dr. DELSTANCHE (Brussels) presented a *Modification in Massage Instrument for the Tympanum*.

This little apparatus works like the masseur, and determines at will the condensation or rarefaction in the auditory canal. It is a three-branched tube, in the form of the letter Y ; the vertical arm ends in an olive-shaped nozzle. Each of the other branches terminates in a metal valve, one opening outwards, and one inwards, and acts as an aspirator and force-pump. This simplifies the technique.

Other advantages :—(1) Thanks to the condensation, examination of the tympanum is facilitated ; the walls of the canal, from being in a lax condition, are pressed out. (2) Adhesions of the middle ear are favourably influenced by a series of shocks of condensation—in the same way as the shocks given by Lucae's probe, but with less pain.

Dr. BAYER presented a *Laryngoscope*, with detachable mirror.

Dr. SCHLEICHER (Antwerp). *A Galvano-Cautery Handle, with Rheostat*.

With this instrument a resistance is interposed in the circuit of the galvano-cautery loop, so that its proper electrical resistance diminishes by the fact of its retraction. Often at the end of operations, especially with big loops, the wire heats to fusing, or sufficiently to provoke a flow of blood. Interruption of the current is only a half-measure, and, even commencing with a very feeble current, makes the strangulation of the tumour too slow, with deeper cauterization, thicker eschar, and more reaction and pain. Some operators entrust the measurement by a rheostat to an assistant. In the author's instrument the rheostat, composed of a wire mesh rolled round a plate of glass or slate, is situated on the left lower border of the ebonite handle. The current, instead of passing through the conducting wire, courses along a thin, red copper plate in the left upper edge of the ebonite. It is gathered by a horizontal tongue, then by another vertical tongue placed against the rheostat. The intensity can be kept regular during the whole operation, and the wire never burns.

Dr. BUYS presented a *small Syringe* for making injections of absolute alcohol into the hypertrophied mucous membrane of the nose.

Dr. BECO (Liège). *Remarks on Tamponing of the Nasal Fossæ in Rebellious Epistaxes.*

The author relates particulars of a case, which suggested these reflections.

It was a man aged sixty, atheromatous, but without hepatic, renal, or cardiac affection. He was suddenly seized with nasal hæmorrhage. The first time it was arrested by a long anterior tampon, but recurred more abundantly some hours after. It was unilateral, and came from the right naris. Rhinoscopically, a jet was seen to descend into the middle meatus, breaking against the septum, but the vessel could not be discovered. The arch of the palate beat synchronously with the pulse. It was not thickened, and posterior rhinoscopy revealed nothing. At the external angle of the choana the mucous membrane seemed a little altered, but with nothing precisely normal, and without pulsations.

Posterior tamponings with iodoform gauze for eight days, along with methodical anterior tamponings, overcame the hæmorrhage. Sometimes the blood, during coughing, found its way through the lachrymal canal in small drops or through the opposite nostril. The patient had quietude only with complete plugging of the naso-pharyngeal cavities, forcing the blood to clot and close the ruptured vessel, but respiration was painful and sleep impossible. The ruptured vessel was discovered to be in the right nostril, probably very high, but at some distance from the edge of the choana. Dr. Beco made a sort of bag of iodoform gauze and filled it with dry perchloride wool of conical shape, at the summit of which was attached the thread, which would have got sufficient tamponing in the nostril, and have allowed of breathing. The device, however, was too late, the patient getting well before it could be applied.

It will be well understood that a great number of local and general means had been tried. A little time afterwards, in removing mucous polypi, an important osseous lamella was torn by an awkward movement of the patient. Hæmorrhage was abundant, and Dr. Beco did not succeed, after three trials, in introducing an anterior tampon to the right spot. He then made trial of the gauze bag and retrograde tamponing, contenting himself with two thicknesses of tissue, without internal wad, which increased the size too much. He very easily drew the extremity of the tampon into the nostril, adjusting the posterior extremity in the choana with the finger. The hæmorrhage was arrested at once, and the patient was only a little uncomfortable.

Tamponing of the nostril thus practised from behind forward leaves free the greatest part of the cavum, and in all cases the healthy nostril. The ordinary pharyngeal tampon has only real utility in hæmorrhage of the cavum itself, and without abandoning the older method Dr. Beco thinks that his plan has advantages which ought to be borne in mind when the surgeon is in difficulties, in the application of ordinary retro-pharyngeal tampons; also in the proceeding he has described Dr. Beco dispenses with the buccal thread for the withdrawal of the tampon, it is uncomfortable for the patient, provoking incessant efforts at deglutition, and attacks of coughing not favourable to hæmostasis. The gauze is generally easily withdrawn with adenoid forceps, or through the anterior

naris; the author generally lubricates the tampon with boracic vaseline or menthol oil. The advantages of the method are: easier introduction of the tampon and less painful, its extraction is more easy, and being less adherent there is less fear of secondary hæmorrhage, advantages which are appreciated in post-operative anterior tamponing.

Dr. DELSTANCHE was not favourable to posterior tamponing, which may provoke otitis. He introduces into the nose from before backwards, with the stylet, a number of wads of cotton held together with a thread.

Dr. GOUGUENHEIM preferred iodoform gauze, which he introduces through the anterior nares in small slips.

Dr. RUTTEN believed that it was not prudent to do without the mouth thread; if there are in the nasal cavity carious points the tampons become very adherent.

Dr. HICGUET believed that the application of an anterior tampon along with a posterior tampon is effective in all cases; he employs this method when the site of the hemorrhage is not visible, and simple measures (digital pressure over the nares, cauterization, etc.) fail to arrest the hæmorrhage.

Dr. BOLAND (Verviers). *A few words on certain Respiratory Difficulties.*

Three patients, aged from sixty to sixty-five years, succumbed during two and a half years to cardiac accidents, after having presented identical symptoms. Dr. Boland was called upon to examine the last two for increasing expiratory difficulty. The voice was normal, but there was great inspiratory and expiratory difficulty, exaggerated on the least effort. The mobility of the vocal cords was perfect; there was no affection of the recurrences. In the inferior portions of the trachea there was a marked flattening from before backwards, and a little from left to right, the calibre being reduced about a half. The diagnosis of aneurism of the arch of the aorta was made. In such cases there is no relief from tracheotomy; the trachea ought never to be opened without previous laryngoscopical examination. The author related another case, where it was proposed to operate for intense respiratory difficulty. It was due to hysterical laryngo-spasm, which yielded rapidly to bromide. In another case the trachea was simply covered with dry crusts.

Dr. WAGNIER (Lille). *Osseous Ethmoidal Bulla, with Myxomatous Degeneration and Consecutive Nervous Phenomena.*

The patient was a woman, twenty-four years of age, attacked by influenza and acute catarrhal angina. The symptoms appeared to be unexplained by these affections, and when the influenzal fever disappeared, after a few days' treatment, the presence of vertigo, nervous symptoms, and considerable obstruction of the nasal passages suggested to the author to make a thorough examination of the nose. On rhinoscopy a round, fixed and hard tumour was perceived completely blocking the right nostril. The author diagnosed an ethmoidal bulla; he resected the projecting part with the galvanic loop, leaving the cupula, which he operated upon with Grünwald's forceps, fragment by fragment. There

remains only a small portion of the bulla ; the mucous membrane behind was seen to have undergone myxomatous degeneration. All the nervous symptoms disappeared with the exception of vertigo, which persists as intense as ever ; if it does not disappear in a short time, Dr. Wagnier will extirpate the last remains of the tumour.

Dr. DELSTANCHE asked if the ear presented no lesion. He could not understand the vertigo without lesions of the ear or stomach.

Dr. WAGNIER answered that the ear is perfectly healthy, and that the digestive tract has not presented any morbid symptom since the influenza.

Dr. ROUSSEAU (Brussels) recently had seen a case which resembled that of Dr. Wagnier. It was that of a patient who for about eight months had nasal stenosis of the left side. He had never suffered or had fever. On rhinoscopic examination, the author found a pyriform tumour with the large end in front, fluctuating, and arising from the middle turbinated and occupying all the naris. The mucous membrane was normal. There was no pus, neither in the meatus nor between the turbinated and the septum. The author cut through this tumour with the galvano-caustic loop, and found it to contain a cavity filled with thick and yellow pus, the walls of which were formed by the mucous membrane in front, and by the bone on each side. It was an abscess in the substance of the middle turbinated, a chronic ethmoiditis. The case was interesting because of the considerable development of pus, and its peculiar aspect.

Answering a question of Dr. Delstanche, the author explained that the cavity of the tumour was partly formed at the expense of the bone. An osseous lamella was attached to the septum, the other to the middle meatus.

Dr. BOVAL (Charleroi) had seen a patient whose nostril was completely hidden by the tumefaction of the inferior turbinated. Incision let flow a considerable quantity of pus (thirty to forty grammes).

Dr. NOQUET (Lille). *Case of Cyst of the Epiglottis.*

Judging by my researches and personal experience, cysts of the epiglottis are rare ; most authors do not specially mention them and are content to speak only of cysts of the larynx, although Morell Mackenzie, in his treatise, gives a drawing showing cysts on the anterior surface of the epiglottis, and expresses himself also that these cysts of the larynx are relatively rare.¹ Of the one hundred cases on which my statistics are based, two alone presented all the characteristics of cysts ; other cases have been published by Virchow, Bruns, Durham, Gerhardt, Schrötter, and Edis. These tumours usually spring from the epiglottis or ventricular bands. One of the translators of Mackenzie's work—Dr. Moure—adds a note in a work I have recently published,² in which I have collected all the reports on cystic tumours published up to that time, and a fair number of unpublished cases (thirty-four unpublished cases in total of sixty-eight). I have sufficiently proved that cysts are rarer on the epiglottis than on the vocal cords. In fact, the sixty-eight cases reported

¹ Morell Mackenzie. "Traité pratique des Maladies du Larynx, du Pharynx et de la Trachée." Traduit par Moure et Berthier. Paris, 1882.

² Poyet. "Manuel pratique de Laryngoscopie et de Laryngologie." Paris, 1883.

are divided in the following manner : thirty-eight intra-laryngeal, arising in thirty-three cases from the vocal cords ; five times from the ventricles of Morgagni ; twenty-five extra-laryngeal, arising in twenty-three times from the epiglottis and twice from the arytenoids. In five cases the author does not indicate the point of origin.

In Poyet's manual of laryngoscopy and laryngology is an observation on a cyst of the epiglottis,¹ with a coloured plate. This cyst, which occupied all the anterior surface of the epiglottis, presented itself in a medical student, who noticed his breathing to become painlessly more and more obstructed. One day the student was seized with a violent attack of suffocation, and felt at the same time the sensation, truly as it turned out, of a foreign body in the gullet. He violently forced his finger down his throat. He appeared also to have ruptured the cyst wall, and suddenly expectorated a mouthful of clear yellow fluid. The symptoms of suffocation immediately disappeared, but the cyst refilled, and the attacks of suffocation reappearing, he consulted Crélat, and afterwards Poyet. In this case the voice was much altered in *timbre*, was still stifled and feeble. As far as I am personally concerned I have only seen a single cyst of this nature, and it appears sufficiently interesting to me to crave your permit to relate it to-day.

T., aged thirteen years, of good constitution, and showing no symptoms particular about his throat, had at the end of February, 1895, a catarrhal pharyngitis, which was accompanied by slight fever, and rendered deglutition very painful. The family doctor considered the symptoms those of an ordinary pharyngitis. As he was rather forcibly depressing the tongue to inspect the throat he was surprised to see a yellowish-white tumour, as large as a fair-sized cherry, on the level of the epiglottis. He informed the parents, and advised consultation with me. The pharyngitis was readily cured, and when I saw the child on March 12th he had no pain or discomfort, the voice was absolutely normal, deglutition and respiration very easy, and he had no cough.

By forcibly depressing the tongue I also saw the tumour, and with the laryngeal mirror I could assure myself that it was spherical, without any irregularity, and that it was as large as a fair-sized cherry, of a yellowish-white colour, with arborescent vessels, and springing by a large base from the anterior surface of the epiglottis, on its left side. The epiglottis of this patient was much folded in two, so that it had, in a manner, two surfaces, right and left, the tumour implanted on the extreme left.

This tumour might have been long unperceived had it not been for the pharyngitis which induced the examination of the throat.

The position and aspect of the tumour enabled one to diagnose it as a cyst. One knows that there exist on the surface of the epiglottis groups of glands, which becoming obstructed lead to the formation of retention cysts. The parents were much distressed, and feared the rapid development of the tumour and dangerous suffocation. I reassured them by saying the cyst had probably attained its maximum size, and if it grew it would be slowly. The parents insisted and proposed the application

¹ Poyet. "Manuel pratique de Laryngoscopie et de Laryngologie." Page 354, and plate iv., fig. 24.

of the galvano-cautery, and I was obliged to postpone the operation. The child returned on April 11th, with the family doctor, and had been persuaded to undergo the operation under cocaine. During this time the tumour had remained stationary, and there had been no discomfort.

I made three applications of forty per cent. solution of cocaine hydrochlor. By depressing the tongue, the cyst was readily accessible with a galvano-laryngeal knife; it was scarcely in contact when the knife penetrated the cyst, and a yellow liquid flowed out, slightly viscid, which evaporated rapidly under the action of heat. I endeavoured to destroy the cyst wall.

The procedure was very short and painless, and when it was over there remained upon the surface of the epiglottis a few white and shrivelled portions of the cyst wall.

The child lives some distance from Lille, and I have not seen him since, but the family doctor wrote to me at the end of May, that there had been no ill effects and that no trace of the tumour was to be seen.

It is rarely possible to see the epiglottis by depressing the tongue; in this case this peculiarity, which discovered the tumour, at the same time simplified the operation, and made the laryngeal mirror unnecessary.

Dr. BAYER. *Contribution to the Existing Reports as to the connection between the Female Generative Organs and Laryngeal Affections—Case of Laryngeal Stenosis disappearing after Abortion in a Tubercular Subject.*

He had frequently drawn attention in his writings to the connection which exists in the female, both normal and pathological, between the sexual apparatus and the larynx.

Dr. Bayer possessed full records of this case. A lady thirty-four years of age consulted him about pronounced symptoms of laryngeal stenosis, dyspnœa, aphonia, cough, expectoration, etc. Laryngoscopic examination revealed an ulcerative laryngeal tuberculosis, with tumefaction of the epiglottis, arytenoids, and the interior of the larynx. To such an extent was the glottis reduced, that tracheotomy seemed indicated at short notice. One day, however, put an end to the necessity for surgical aid, for the patient, who was three months pregnant, aborted, and the severe hæmorrhage had, when Dr. Bayer saw her eight days later, rendered laryngotomy needless. It is seen from this observation that getting smaller (as in this case) can have an action equal to that of menstruation. One must never neglect the condition of the generative organs in females suffering from important and obstinate laryngeal disorders.

Dr. BROECKAERT. *The Cortical Centre of Speech.*

The author had performed, in the laboratory, numerous experiments on the dog. It was easy to make a laryngoscopic examination by putting out the tongue with forceps, and holding back the epiglottis with a retractor. Each time the two centres have been demonstrated, and the histological researches are confined to the phenomenon observed. Broeckaert reviewed the work of Horsley and Semon. The following are his conclusions:—

1. Unilateral excitation of Krause's centre, by means of a weak induced current, causes adduction of both vocal cords.

2. Bilateral extirpation of Krause's centres causes the abolition of barking, but the reflex adduction of the cords is preserved, as may be proved by laryngoscopic examination. Also the animal continues to cry and squeal, in fact executes all the phonatory movements of which the newly born are capable.

3. The laryngeal nerves remain unaffected after extirpation of Krause's centre ; this proves that all the fibres which are involved in adduction of the vocal cords arise from the medullary centre, and not directly from the cortical centre. Histological examination of the laryngeal muscles proves that these are also unaffected.

4. Loss of ability to bark persists for some weeks. Gradually, however, the animal learns to bark again in the same fashion as he learnt originally.

5. The centre is reformed, very probably in the immediate vicinity, by a new apprenticeship. The new centre, thanks to the law of continuity in time and space, associates itself with the other centres involved in the complex act of barking ; the re-establishment of voluntary barking is thus possible.

Dr. DÉLIE. *Ulcerative Follicular Tonsillitis.*

This affection has not usually any distinctive symptom, objective or subjective, general or local, and disappears rapidly under simple therapy, all that exists being pain in deglutition, and sometimes perversion of taste.

At first sight the appearance is that of chronic follicular tonsillitis, but a more careful examination reveals the presence of ulceration, from half to one centimètre in diameter ; irregular borders, punched out ; the base caseous, of a greyish-white, pultaceous, and without any inflammatory zone. On cleansing the ulcer, it penetrates from one to two centimètres into the substance of the tonsil. This lesion is frequently single. It is often accompanied by glandular enlargement, and its discovery due to chance. Antiseptic gargles cure it in about one week. Whilst Moure considers this to be an acute process, Délie sees in it a chronic slight inflammation, causing an exaggerated secretion and desquamation of epithelium. The products are not cast off, they accumulate ; whence the depth of the ulceration. Once Délie had at first believed it an ulcerated gumma, and once a cancer.

Dr. CHEVAL. *The Treatment of Ozæna by Interstitial Electrolysis.*

Cheval maintained that if the positive electrode is a needle, bar, or blade of copper, one can obtain *cupric interstitial electrolysis*. At the positive pole a combination of Cl.O. and Cu. forms into an oxychloride of copper, soluble in NaCl, therefore in the plasma. If the positive electrode is silver we have argentic interstitial electrolysis. All these electrolyze in an aqueous solution of NaCl. To operate there are necessary, (1) a constant supply of electric energy, (2) a milliampère meter exactly graduated, (3) a rhéostat, (4) the needles, which are insulated by means of a piece of india-rubber tube. The bipolar method is to be given the preference ; a silver or copper needle is introduced into the middle turbi-

nate, either into its substance or within its concavity ; a steel needle is inserted into the inferior turbinate of the same side, having, if possible, pierced both bone and mucous membrane, and traversed the entire length of the turbinate. In the case of deviated septum one enters into it with the negative needle. According to the gravity of the disease twelve or thirteen applications are necessary per *séance*, and one or more *séances* are sufficient. The intensity of the current should be more or less raised according to the sensitiveness of the patient, and as a rule it will be stronger or weaker according to the number of elements in use. Hence the necessity of having a *rhéostat* of small resistance. The general intensity adopted varies from eighteen to thirty milliamperes, and the duration of the *séance* from seven to fifteen minutes. The sittings should be separated by eight to fifteen days ; however, it is not inconvenient to treat both nares at the same sitting. Cheval frequently employed electrolysis *en cascade* ; two, three, four, and even twelve, *ozæna* patients are connected together between the poles of one battery. The number of applications required by each case was obtained by a longer or shorter *séance*, the intensity was the same for all. Cocainization usually rendered the passage of the needles painless. On the following day, or that following, the stench disappeared. All the mucous membrane of the middle turbinate and meatus turned to a bluish-green colour. The scar on the inferior turbinate does not extend beyond the mucosa. The separation is complete in about fifteen days. In grave cases the mucosa remains slightly atrophic, but shows signs of regeneration.

In this connection, we refer to Dr. Capart's ideas in the treatment of *ozæna*, in which the lesion lies in the mucosa, especially in that of the middle turbinate, whence it extends to the deeper parts. Intra-nasal injections of bicarbonate of soda, of chlorate of potash, of glycerine, of carbolic, form the basis of the treatment, which sometimes requires some years to effect a cure. As for massage, it has no effect beyond amelioration, and should be practised preferably by Braunschweig's motor. After having practised cupric electrolysis, which includes the argentic method Capart uses massage with the application of methyl blue.

Dr. GOUGUENHEIM. *Diphtheria in the Adult in the Hôpital Lariboisière.*

Gouguenheim's researches at the Hôpital Lariboisière gave the following results :—

1. Diphtheria constitutes a much more important and common class of angina in the adult than has been believed.
2. It comes under that variety of angina, with a more or less widespread rind-like membrane in the throat, which requires only demonstration to be more frequently recognized.
3. It is above all like acute follicular or lacunar tonsillitis, which are made to include a very large number of cases of diphtheria.
4. The remaining forms are habitually slight and almost always undergo spontaneous resolution.
5. Herpetic tonsillitis may be occasionally one form of diphtheria.
6. Benign diphtheria is occasionally complicated with suppuration.

7. Glandular swelling is common, but is not invariably present.

8. In order to avoid error in diagnosis all cases of acute sore throat should be examined bacteriologically.

9. It is necessary to found in all hospitals a special department for anginas, which would be most useful and assist to limit the spread of the contagion.

HICGUET maintained that the virulence of the angina should be attributed to the association of microbes, especially the staphylococcus and streptococcus. Dr. Gouguenheim did not deny this, but the bacillus of Loeffler is not less the true cause of infection, for pure diphtheria is frequently observed—forty-five times in ninety-three; in forty-one cases there was mixed infection, and in seven the streptococcus was alone present. The gravity of the case depended upon the laryngeal trouble caused by pure diphtheria, without the presence of the mixed infection influencing the marvellous action of the serum. Finally, one meets with Loeffler bacillus in convalescents and in those considered slightly affected. And one has seen diphtheria regarded as cured pass on the infection.

(To be continued.)

ABSTRACTS.

DIPHTHERIA, &C.

Crouch, H. C.—*The Detection of the Diphtheria Bacillus.* "New York Med. Journ.," Oct. 5, 1895.

THIS is effected by the use of certain stains—namely, a one per cent. of methyl-green; a mixture of five parts of a fresh one per cent. solution of methyl-green, one part of a one per cent. solution of dahlia-violet, and four parts of water, and then with a weak solution of Bismarck brown. Other stains will give the same results, but this is the best. They all react best in recent cultures. *R. Lake.*

McCullom, J. H.—*The Importance of Bacteriological Investigations in Cases of Diphtheria.* "Boston Med. and Surg. Journ.," Jan., 1895.

OUT of five hundred cases of suspected diseases 26.6 per cent. proved to be diphtheria, and the author, after describing several, and quoting various authorities, says:—In suspected cases of sore throat or cases of profuse nasal discharge the investigation should be made. No patient to be removed from isolation without inoculation having twice been negative. The pseudo-bacillus is sufficiently rare to be ignored. *R. Lake.*

Fossaty.—*Anomalous (Frustes) Forms of Diphtheritis Angina.* Thèse de Paris, 1895.

SUMMARY description of diphtheritic angina, without pseudo-membranes. Nothing new, except two unpublished cases. *A. Cartaz.*

Ewing, J.—*The Leucocytosis of Diphtheria under the Influence of Serum Therapy.* "New York Med. Journ.," Aug. 10 and 17, 1895.

THE author examined the blood of fifty-three patients who underwent the serum treatment, and after an elaborate paper, which it is not possible to condense so as to do justice to the author, the following summary is given.

Diphtheria is usually attended with marked leucocytosis. The increase of leucocytes usually begins a few hours after infection, probably occurring earlier in refractory individuals, and, often being long delayed in susceptible cases with severe inflammation. In favourable cases the leucocytosis is the greatest at the climax of the disease, and steadily declines during convalescence. There may, however, be prolonged hyper-leucocytosis after other local and constitutional symptoms have subsided. In unfavourable cases the leucocytosis continues until death, but in somewhat prolonged cases, with much septic absorption, there may be an uninterrupted decrease of leucocytes continuing up to the fatal termination. A complicating pneumonia usually causes a considerable increase in leucocytosis.

The degree of leucocytosis in diphtheria often varies with the fever, but much more frequently corresponds to the extent of the local lesion.

The intra-vascular leucocytosis of diphtheria indicates a pronounced reaction against a severe infection, but is not necessarily an unfavourable prognostic sign. Steadily decreasing leucocytosis usually, but not always, accompanies a favourable course in the disease. Slight leucocytosis usually indicates a mild infection, but fatal cases may for several days show no increase, or even a decrease, of leucocytes.

The staining reaction of the leucocytes is an accurate measure of the severity of the diphtheritic infection, and variations in this reaction often precede changes in other symptoms.

Antitoxin, within thirty minutes of its injection, causes a hyper-leucocytosis, the reduction affecting specially the uninuclear leucocytes, while the proportion of well-stained multinuclear cells is increased. This action is due largely to the immunizing principle contained in the serum.

In favourable cases, after the injection of antitoxin, the leucocytosis never again reaches its original height. In severe and less favourable cases the injection is followed in a few hours by hyper-leucocytosis and fever, exceeding those symptoms as found in the original condition. In unfavourable cases an injection of antitoxin may be followed immediately by rapid hyper-leucocytosis, or extreme hyper-leucocytosis and death.

The reduction of leucocytes immediately succeeding the injection of antitoxin, especially in severe cases of diphtheria, is an undesirable feature of the action of this agent, and as far as possible should be avoided.

The multinuclear leucocytes found in the blood of favourable cases after treatment by antitoxin show increased affinity for gentian violet. This change may be observed within twelve hours after the injection, and the failure of its occurrence is a very unfavourable prognostic sign.

The variations in the staining reaction of leucocytes in diphtheria indicate that the nuclei of these cells contain a principle essential to phagocytosis and immunity in this disease.

R. Lake.

Patet.—*Serum Treatment ; Clinical Results.* Thèse de Lyon, 1895.

CRITICAL review of this method of treatment, and *exposé* of the statistical results in general. The author describes the technique, and enumerates the clinical indications and accidents of serum treatment. He attributes to the serum only exanthemata. In the Charity Hospital of Lyons the percentage of the mortality has fallen to seventeen per cent., instead of forty to fifty per cent. before the introduction of antitoxic serum.

A. Cartaz.

Mugues.—*Laryngeal Intubation in Diphtheria ; Critical and Clinical Study.* Thèse de Lyon, 1895.

DESCRIPTION of the method (technical application, indications and complications). The author gives general statistics of the cases treated in Lyons since 1890 :—

Before the serum treatment, one hundred and twenty-four cases ; dead, eighty-three cases.

Secondary tracheotomy has been necessary twenty-five times, with twenty deaths.

After the serum treatment, seventy-three cases ; dead, twenty cases.

A. Cartaz.

Baudouin, T.—*Intubation in Croup.* Thèse de Paris, 1895.

A COMPLETE description of the method. The original statistics of the author include seventeen cases treated in Rennes's Hospital. Twelve treated by intubation, with eight deaths ; five treated by intubation and antitoxin, with two deaths.

A. Cartaz.

Tsakiris, J.—*Ancient and Modern Instruments for Intubation in Croup.* Thèse de Paris, 1895.

DESCRIPTION of the various instruments and modifications of O'Dwyer's first model. He uses an extractor with metallic loop and tubes of aluminium.

A. Cartaz.

Castelain.—*Chloroform and Tracheotomy.* "Bull. Méd. du Nord," Aug. 23, 1895.

THE author is in favour of anæsthesia in cases where tracheotomy is necessary, and also in cases of diphtheria. He gives rules for administration of anæsthetics and the indications for anæsthesia.

A. Cartaz.

N O S E, & C.

Pascal, A.—*Parasites of the Nasal Fossæ.* "Archiv. de Méd. Milit.," Oct., 1895.

DESCRIPTION of a case of entrance into the nasal passages of *Lucilia hominivorax* larvæ. Intense pains, with purulent and sanious discharge, and destruction of the septum. The cavities were cleaned partly by free sublimate washing, tobacco, and pulverizations of sublimate and iodoform, and partly by direct extraction with forceps. The larvæ amounted to upwards of eighty. Complete cure.

A. Cartaz.

Winslow, J. R.—*A Case of Congenital Osseous Occlusion of the Choana.* "American Med. and Surg. Bull.," Feb. 15, 1895.

THE bony occlusion of the choanæ was destroyed by galvano-cautery, curing deafness which had been present for some time.

R. Lutz.

Adenot.—*Nasal Osteoma. with Epileptic Seizures.* "Lyon Méd.," April 18, 1895.

THE author relates the case of a young man, aged twenty-seven, suffering for five years with frequent nocturnal epileptic seizures. No syphilis ; no alcoholism ; no results with bromide of potassium in large doses. He found in the right nasal fossa a large tumour, osseous, and completely obstructing the nostril. The tumour was sessile and fixed. Ablation after anæsthesia by vertical osteotomy of the nose (Ollier's method). During a month there was abolition of the epileptiform crisis, which reappeared, but not so frequently, and not so intense. The tumour was ar osteogenic exostosis, with chondromatous envelope.

A. Cartaz.

Lacroix.—*Treatment of Spurs and Thickenings of the Nasal Septum.* Thèse de Paris, 1895.

DESCRIPTION of various methods of treatment. The author believes the best is the destruction of small spurs by means of electrolysis, and by electric saws and trephines of the larger thickenings. *A. Cartaz.*

Stamatiadés.—*Treatment of Malignant Tumours of the Nose by the Natural Passages.* Thèse de Paris, 1895.

THE author believes that major operations, with temporary resection of the nose, of the maxillary bone, of the velum, etc., must be reserved for large neoplasms, with extension into the accessory cavities of the nasal fossæ. When the tumour is localized, without these extensions, it can be removed through the nose. The galvanic loop will be the best means for preventing hæmorrhage. *A. Cartaz.*

Clark, J. Payson,—*The Condition of the Nose in Phthisical Patients.* "Boston Med. and Surg. Journ.," Oct. 3, 1895.

After drawing attention to the functions of the nose, especially the turbinates, the author gives the results of his examination of the nose in one hundred healthy and one hundred phthisical cases. Of the former, forty-two showed signs of atrophy, of the latter, seventy-three; and the larynx was affected in thirteen, of which seven were in atrophic cases. The atrophic changes were thought to precede the pulmonary. *R. Lake.*

Rohmer.—*Orbito-Ocular Manifestations in Ethmoidal Sinusitis.* "Revue Méd. de l'Est," July 1, 1895.

THE author relates a case of orbital tumour secondary to an ethmoidal sinusitis, and debates the differential diagnosis of ocular symptoms in various nasal sinusites. Ethmoidal mucocele or suppurative sinusitis will be recognized by a tumour of the internal side of the orbit, œdema of the lids, and specially of the inferior lid, extending to the malar and temporal regions. In ethmoidal sinusitis, troubles from compression of the optic nerve are not so frequent and so premature as in frontal or sphenoidal sinusitis. *A. Cartaz.*

Salva, J.—*Inflammations of the Orbit secondary to Maxillary Sinusitis.* Thèse de Paris, 1895.

THE author describes the orbital complications resulting from empyema of Highmore's antrum. They are osteo-periostitis, acute or chronic, phlegmon of the orbit, and phlebitis of the ophthalmic veins. The inflammation is nearly always the consequence of infectious irritation of the floor of the orbit; the extension by venous thrombosis is comparatively rare. He gives an accurate description of these secondary inflammations. The treatment is necessarily surgical, and can be instituted immediately. *A. Cartaz.*

Lichtwitz.—*Complications of Suppurations of the Nasal Accessory Cavities.* "Journ. de Méd. de Bordeaux," Sept. 1, 1895.

IN one hundred and forty-nine cases of empyema of various sinuses the complications were:—

1. Nose.—Pseudo-ozæna, thirteen times; polypi of the middle meatus, twelve times; caseous coryza, three times; cacosmia in one-third of the cases.
2. Pharynx.—Frequently pharyngeal catarrh.
3. Ears.—Suppurative otitis, fifteen times; subacute otitis, seven times chronic otitis, fourteen times; tinnitus and murmurs, nine times; vertigo, three times.

4. Eyes.—Dacryo-cystitis, three times ; exophthalmia, twice ; partial atrophic optic neuritis, twice.

5. Nervous system.—Hemicrania or frontal headache, fifty-one times ; trifacial neuralgia, three times.

6. Cutaneous system.—Erysipelas, five times ; eczema, five times ; acne, five times ; seborrhoea, once ; erythema, twice.

7. Broncho-pulmonary system.—Pseudo-phymia, seven times ; asthma, five times.

8. Digestive tract.—Gastric dilatation, four times ; enteritis, three times.

9. Heart.—Pulse slackened, once ; phlebitis, twice. *A. Cartaz.*

Magnus, Madame.—*Clinical Study of Adenoid Growths ; Surgical Treatment ; Post-Operatory Results.* Thèse de Paris, 1895.

GOOD clinical review of the symptoms of adenoid growths. The author advocates surgical treatment, with anæsthesia by means of ethyl-bromide, and indicates the excellent results by the increase of body weight of the children operated upon, and the enlargement of thoracic diameters after the curettage of the pharynx. These mensurations are the original part of this thesis. *A. Cartaz.*

Beausoleil.—*Secondary Hemorrhage after Ablation of Adenoid Vegetations.* "Journ. de Méd. de Bordeaux," June 9, 1895.

THE hæmorrhage appeared five days after ablation of adenoid tumours in a boy, aged fifteen years, and was considerable and repeated during two days—three or four times a day. The tumours were dense and hard, and very vascularized. Cure. *A. Cartaz.*

LARYNX.

Hubbard, D. L.—*Chronic Catarrhal Laryngitis.* "New York Med. Journ.," Aug. 3, 1895.

THE paper is chiefly devoted to the etiology of the disease, the author tracing most cases to infantile nasal obstruction. *R. Lake.*

Merklen.—*A Case of Laryngeal Ictus.* "Bull. Soc. Méd. des Hôp.," Oct. 18, 1895.

THE relation of a case of ictus in a man, thirty-three years of age, without specific lesions ; no alcoholism, syphilis, hysteria, epilepsy or tabes. He has had for some years pulmonary emphysema and catarrhal bronchitis. During the last three weeks he has, twice or three times a day, loss of consciousness, with falling, provoked by fits of coughing. A true laryngeal ictus. No irritation of the throat existed. The symptoms were cut short rapidly, in two days, by antipyrin, in doses of three grammes a day. The author believes that laryngeal ictus is not caused only by disorders of the antral circulation (Garel), but it is also and simultaneously an hyper-excitability of the mucous membrane of the throat and larynx, excitation of the bulbar centres, and consequently spasms of the larynx or true syncope, as is admitted by Armstrong, Cartaz, and others. *A. Cartaz.*

Chappell, W. F.—*Some Interesting Laryngeal Neoplasms.* "Manchester Eye and Ear Hospital Reports, 1895."

A CASE of congenital papilloma of the larynx. Some of the growths disappeared after tracheotomy ; the rest were removed by forceps. (2) Sarcoma of epiglottis

in a female, aged thirty-two years. The patient gave a history of eighteen months, her chief symptoms being difficulty in swallowing, and stertor at night. The growth was removed under cocaine anæsthesia after a preliminary tracheotomy with the galvano-cautery loop. It measured four and a half inches in its larger and three and five-eighths inches in its lesser circumference. Microscopically, it proved to be a epithelioma. (3) Extensive syphiloma of the left ventricular band. (4) Epithelioma of the left ventricular band, with glandular enlargement. Palliative tracheotomy. (5) Fibroma of left cord. Removal. In conclusion, the author advocates the endo-laryngeal method for children. Belladonna is administered for a few days until dryness of the throat is obtained, and shortly before the operation opium is given, and a two per cent. solution of cocaine suffices to complete anæsthesia. *R. Lake.*

Moure. — *Laryngo-Tracheal Perichondritis, with Abscess.* "Journ. de Méd. de Bordeaux," May 26, 1895.

THE author relates the case of a woman suddenly seized in the course of influenza with violent pains in the throat, tumefaction of the neck, fever, all the signs of suppuration in the larynx, without respiratory troubles, but with considerable hoarseness. The author found in the subglottic region a little tumour, similar to a furuncle, and the next day, after expectoration, with pus, the general symptoms decreased, and, a few days later, complete cure resulted. *A. Cartaz.*

Berard. — *Peri-Laryngo-Œsophageal Actinomyces.* "Lyon Méd.," April 21, 1895.

DESCRIPTION of a case of actinomyces in a man, aged fifty-seven, treated for laryngeal inflammation. The diagnosis has been lately established by bacteriological examination of the pus. The anterior part of the neck was invaded by a large oedematous tumefaction of the tissues. The treatment by iodide of potassium (five grammes a day) was unsuccessful, and the patient died from bronchitic complications, with oedema of the inferior members. At the autopsy were found oedema of the lungs, dry pericarditis and chronic nephritis. The larynx, pharynx and superior part of the œsophagus were compressed in a mass of lardaceous and putri-sanguineous tissue, without actinomyces. It was a chronic and phlegmonous inflammation of the neck, secondary to actinomyces, and consequently to general infection. *A. Cartaz.*

Glasgow, R. — *Foreign Bodies in the Larynx and Trachea, with Report of a Case relieved by Tracheotomy.* "Virginian Med. Monthly," April, 1895.

PATIENT inhaled a pin, and tracheotomy was attempted two days after the accident, but the innominate artery was exposed where it crossed the root of the neck, and, as there was also venous hæmorrhage, the high operation was done, and the pin, two and three-quarter inches long, removed; this was situated three and a quarter inches below the cricoid. Complete recovery. *R. Lake.*

Porter, W. — *Compensatory Arytenoid Movements.* "New York Med. Journ.," Aug. 17, 1895.

REPORT of two cases.

R. Lake.

PHARYNX, &C.

La Rue Vasant, E. — *Fragaria Virginiana Angina, or Strawberry Sore Throat.* "Phil. Policlin.," July 20, 1895.

THIS is said to be a tonsillitis occurring in persons of a rheumatic or gouty diathesis who over-indulge in strawberries. *R. Lake.*

Baudriller.—*Granular Angina.* Thèse de Paris, 1895.

THE author gives an accurate description of this disease, to which he applies the term of follicular hypertrophic pharyngitis. A critical review of the older and recent researches upon this chronic condition, from Gueneau de Mussy to Heryng, Ruault, Moure, etc.

A. Cartaz.

Gautier, Salvador C.—*The Anginas of the Menstrual Period.* Thèse de Paris, 1895.

THE anginas observed in the course of menstruation are all infectious manifestations of the streptococcus. In sixteen cases, including five original, the bacteriological examination has constantly revealed the streptococcus—two or three times associated with staphylococcus. The author believes that these anginas are dependent on stimulation of the vascular and nervous system at this period, and consequently increase of the virulence of the bacillus normally or accidentally localized in the mouth.

A. Cartaz.

Wimberg, Madame S.—*Pneumococcal Angina.* Thèse de Paris, 1895.

DESCRIPTION of this form of angina, studied for the first time by Jaccoud ("Journ. de Méd. et Chir. Prat.," March, 1891). The clinical aspect is similar to that of diphtheria—fever, adenopathy, large and extensive membranes on the fauces, and upon the tonsils. The bacteriological examination indicates the presence of pneumococcus alone instead of Loeffler's bacillus. One symptom is, nevertheless, pretty characteristic—the suddenness of the diffusion of angina and violent chill, as in pneumonia. Eight observations and one original case are described.

A. Cartaz.

Balhadère.—*Gastro-Intestinal Disorders and Chronic Tonsillitis.* Thèse de Paris, 1895.

THE author believes that there is an intimate correlation between chronic tonsillitis and the gastro-intestinal disorders observed in these patients. The troubles of digestion are the consequence of absorption by the stomach and digestive passages of infectious products from the tonsils (purulent discharge, caseous concretions, etc.). He advocates the destruction of tonsils and their crypts by *morcellement* and iodide applications.

A. Cartaz.

Charnley, W.—*Lympho-Sarcoma of the Tonsils; Repeated Removals with very Rapid Recurrence.* "Birm. Med. Rev.," June, 1895.

THE growth, a lympho-sarcoma the size of a tangerine orange, was removed three times in as many months; the original tumour had a very narrow pedicle, and all removals were performed with ease.

R. Lake.

Lanphear, E.—*Two Cases of Sarcoma of the Tonsil. Death from Ligation of the Carotid in one, and death in the second.* "New York Med. Journ.," Aug. 3, 1895.

THE first patient was a woman of fifty-six. The right tonsil and some of the surrounding tissues had been removed by Dr. Manson, and had rapidly recurred, nearly occluding the pharynx, and presented a mass three inches by four inches behind and below the angle of the jaw. Right facial paralysis and great pain were present. A preliminary tracheotomy was performed three days before the mass was removed through an external wound; the internal carotid was severed, but secured, and the common carotid ligatured. The patient died seventy-two hours afterwards, the collateral circulation evidently not becoming established. The growth was a round-celled sarcoma.

Case 2: A male, aged sixty-three, suffered from a spindle-celled sarcoma of the right tonsil, which was removed through the mouth. Death occurred only a few weeks later from recurrence.

R. Lake.

Monro, T. K.—*Case of simultaneous Ulceration of the Lymphatic Tissues of the Throat and Intestines, with Suppuration of the corresponding Glands in the Neck and Mesentery.* "Glasgow Med. Journ.," May, 1895.

A SEWER labourer was admitted, under Dr. Parry, suffering with an ulcerated pharynx, and with an abscess of a cervical gland on a level with the pomum Adami, with enlarged cervical glands. He died ten days after admission, with high temperature, delirium and diarrhoea. *Post-mortem*, the ulceration extended from the right tonsil and pharynx to the interior of the larynx. There was pus in the cellular tissue of the neck. The glands were enlarged. There were general signs of peritonitis. The lymphoid follicles were inflamed and ulcerated. Peyer's patches were honeycombed with abscesses. *R. Lake.*

Semon, F.—*Some Practical Remarks on Foreign Bodies in the Upper Air and Food Passages, and on the Principles of their Removal.* "Med. Chron.," April, 1895.

THE author lays down as the principles which should guide the practitioner in laryngeal and œsophageal cases that (1) no foreign body, the presence of which has been actually detected, ought to be allowed to remain impacted, even if at the time it does not produce any serious symptoms; (2) no attempt should be made to ram an angular or pointed body forcibly down.

The author next relates several unpublished cases illustrating the importance of the above rules, concluding his most comprehensive article with a case which illustrates the necessity of receiving a patient's own history with caution, the patient asserting to the author that her medical adviser had pushed the foreign body down her throat, and subsequently informing another surgeon that the author had done so; there being no foreign body present at all. *R. Lake.*

Allen, Harrison. — *Foreign Bodies in the Œsophagus.* "New York Med. Journ.," Aug. 17, 1895.

EIGHTY-TWO published cases are analyzed and the points considered, divided under the following headings:—

- | | |
|---|------------------------------------|
| 1. Spasmodic stricture, regurgitation of food, and softening of the œsophageal walls. | 7. Anxiety. |
| 2. Emphysema. | 8. Abscess. |
| 3. Interference with respiration. | 9. Emission of air from œsophagus. |
| 4. Excessive mucous secretion. | 10. Pain. |
| 5. Nausea and vomiting. | 11. Convulsions. |
| 6. Hæmorrhage. | 12. Syncope. |
| | 13. Miscellaneous. |

The rapid softening of the œsophageal walls has not been sufficiently dwelt on, nor has the significance and importance of empyema, the excessive mucous secretion and the possibility of emission of air, and too much stress has been laid on pain and convulsions, and not enough on anxiety (in adults). *R. Lake.*

EAR, NECK, & C.

Freudenthal, W.—*Electro-Vibratory Massage of the Ear, Nose and Throat* "New York Med. Journ.," Sept. 28, 1895.

IMPROVEMENTS in the instrument described in the "Med. Record" of July 22nd, 1895. *R. Lake.*

Ball, F. P.—*Otitis Media as a Complication of Pneumonia.* "Med. News," Sept. 21, 1895.

AFTER alluding to the work of Rasch in this connection, the author details three cases, and urges the necessity of aural examination in cases of broncho-pneumonia with head symptoms. *R. Lake.*

Barling, Gilbert.—*Acute Suppuration of Middle Ear, Septic Thrombus of Internal Ear, Jugular Vein, and Pyæmia, without involvement of Mastoid Antrum.* "Birmingham Med. Rev.," Oct., 1895.

DESCRIPTION of a case in which the antrum and floor of the middle fossa were explored without result. A large clot was found in the jugular vein at the *post-mortem.* *R. Lake.*

Galliard.—*Acute Thyroiditis ending in Resolution.* Soc. Méd. des Hôp., Paris, June 21, 1895.

A WOMAN, aged forty years, with no hypertrophy of the thyroid. After a cold during convalescence from influenza cervical pains arose, dysphagia, and fever, with chills. Within a few days after there was painful tumefaction of the right lobe of the thyroid, the left lobe being feebly enlarged. There was no irritation of the fauces or pharynx; no adenitis; no albuminuria. The author diagnosed an acute thyroiditis from influenza. In eight days complete resolution took place under antiphlogistic local treatment. *A. Cantaz.*

Ingals, E. F. and Ohls, H. G.—*The Treatment of Goitre and Exophthalmic Goitre with Thyroid Extract.* "New York Med. Journ.," Sept. 7, 1895.

SIX cases are reported in full, and forty-four others are collected, the results of treatment being reduction in thirty-eight cases; headache was observed in eighteen, dizziness in twenty, trembling in fourteen, rapid pulse in eleven, weakness in seventeen, nausea in seven, loss of weight in twenty-five, in the cases where the symptoms were noted, and when exophthalmos was present it was not affected, nor were cysts of the thyroid. *R. Lake.*

Gibson, F. L.—*Excision of Enlarged Right Lobe and Isthmus of Thyroid Gland.* "Inter-Colonial Journ.," May, 1895.

DESCRIPTION of a case, with operation. *R. Lake.*

Bacon, G.—*A Case of Sarcoma of the Neck, involving the Tonsil, and causing Deafness in a Boy of Seven Years.* "New York Med. Journ.," Aug. 31, 1895.

WHEN first seen the patient exhibited a tumour just below the left ear of sudden origin, watch $\frac{9}{16}$; in ten days the tumour had increased enormously, and the left tonsil was much enlarged, hard, and painless. Exploratory operation showed the impossibility of removing the growth, which proved to be a sarcoma. Dr. W. B. Coley injected the mixed erysipelas and bacillus prodigiosus serum, and which was continued for seven days, when septic symptoms set in, accompanied by facial palsy on the affected side. Death occurred four days after the last injection. *R. Lake.*

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**The OPERATIVE and DIETETIC TREATMENT of
SUPPURATION in the ACCESSORY CAVITIES of the NOSE.**

By Dr. ZIEM (Dantzie).

(Translated by A. BROWN KELLY, M.B.)

(Concluded from page 795.)

II.

The treatment of suppuration in the frontal sinus will now be considered. We cannot recommend the application of the galvano-cautery to the anterior end of the middle turbinate for the purpose of restoring the patency of the naso-frontal canal, as employed by Voltolini in one case. It has been stated several times already that the galvano-cautery does more harm than good in antral suppuration; this applies equally to the frontal sinus. The anterior end of the middle turbinate is also too frequently removed; free scarification in this region would certainly be less harmful and perhaps as effective.

Probing and syringing through the natural orifice, or *canalis frontalis*, according to the statements hitherto published, yield but very doubtful results, and in a large number of cases fail altogether. In addition, the variously shaped probes introduced by different authors proved unsuitable in the hands of others; thus, the probes recommended by Jurasz, Hansberg, and Bresgen have been condemned by Lichtwitz, while Lichtwitz's has been objected to by Luc. Although Schutter, Lichtwitz, and others have obtained in this way cure or improvement of a suppuration in the frontal sinus—indeed, in one of Lichtwitz's cases, with bulging of the orbital wall of the sinus and *exophthalmus*, both these conditions passed off entirely under prolonged treatment—still, on the whole, Moure is right in maintaining that a false passage may be easily made and the

patient seriously injured. In this year's Congress of the Southern German Laryngologists, held a few weeks ago in Heidelberg, Vohsen reported a case in which another surgeon had attempted to probe and introduce blue colouring matter into the sinus. The patient died, however, of meningitis, and at the necropsy it was found that a false passage had been made, and that the powder had been blown into the cranial cavity.¹ Schæffer's method of breaking through the inferior wall of the sinus from the nose, although said to have been used so often without causing injury, must also appear objectionable to everyone who has carefully studied a number of anatomical preparations or even illustrations of this region. The section of a frozen head prepared by W. Braune (Fig. 10) shows particularly well how easily the lamina cribrosa can be pierced and the brain reached by this method.² Kuhnt, too, relates that this occurred to a deceased eminent ophthalmologist on a living subject, who died, of course, in consequence. The exploratory opening of the frontal sinus from without, as practised by Ogston, von Esmarck, Mayo Collier and others, with subsequent washing, being the only procedure in many cases which can confirm the presence or absence of a suppuration, should acquire a greater importance in the future. One must not, however, immediately proceed to the use of the hammer and chisel, which require an anæsthetic; the drill, which is slow in action and consequently shakes the brain more, is also to be avoided; the dental foot-machine, however, fitted with drills two to three millimètres broad, which penetrate only three or four millimètres, may be employed. I have used this last method only in one case as yet, and then without an anæsthetic. After shaving off half the eyebrow, thoroughly cleansing the region, making an incision about $1\frac{1}{2}$ centimetres in length along the edge of the orbit to the root of the nose, and dividing the soft tissues to the bone, the sinus is entered close above the root of the nose. Having assured one's self by cautious probing that a cavity has been entered with a bony wall behind, an exploratory irrigation is made. If pus does not appear in the black basin which receives the washings, nor when a subsequent irrigation is carried out on the same or following day, the opening is allowed to close. On the other hand, if pus is present it will be necessary to adopt one of the following procedures:—

1. To widen the opening to one or one and a half centimètres by means of a trephine fitted to the dental engine.
2. If the sinus extends considerably towards the temple, which may be determined by means of a bent probe, a second opening, three or four millimètres broad, may be made as near the temple as possible, in order to allow of a more thorough washing of the cavity.
3. To remove the orbital wall of the sinus by Jansen's method.
4. To remove the entire anterior wall of the sinus, according to the method hitherto practised in surgery, and most recently in a large number of cases by Kuhnt.

¹ After the public discussion on this unfortunate case it is incomprehensible how not only probing has been again recommended in Germany, but even the enlargement of the frontal canal by means of a sharp spoon introduced through the nose and controlled only by the sense of touch.

² Lichtwitz, when investigating this matter on the dead body, repeatedly entered the cranial cavity instead of the sinus, and that without employing excessive force.

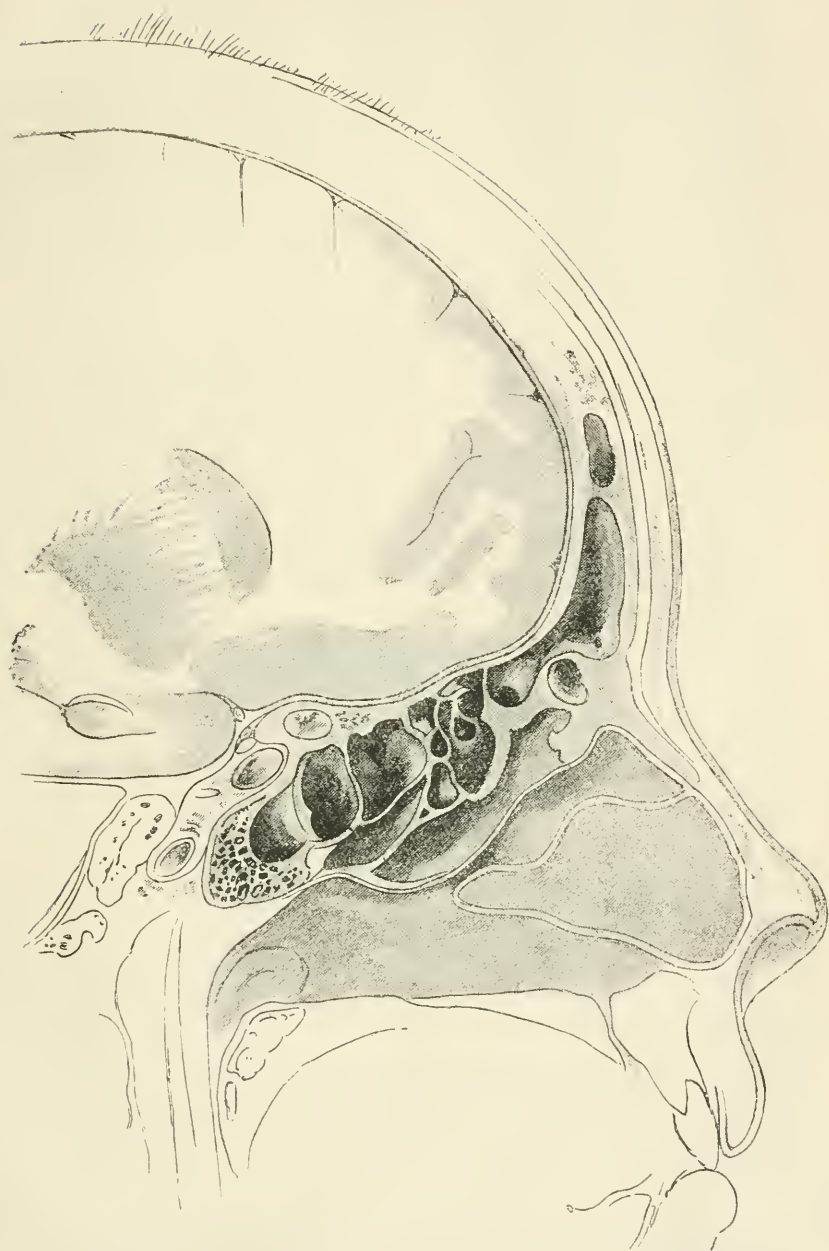


Fig. 10.

5. To employ the method brought before the Congress of German Surgeons this year by Czerny, which consists in making an osteoplastic resection of the anterior wall of the sinus.

We thus obtain a good view of the cavity, and then, according to the condition found, either employ washes or pack the sinus, scrape the mucous membrane or remove it entirely. According to Merkel, Zuckerkandl, and Kuhnt, the lining membrane sometimes sends off-shoots into the malar process and above the orbit as far as the small alæ of the sphenoid; these must be probed, and recesses which are partitioned off and filled with pus must be opened. The methods of Jansen and Kuhnt allow of the exposure of the anterior ethmoidal cells, which are frequently involved along with the frontal sinuses.

By adopting Kuhnt's method we certainly obtain very quick and thorough results, and the subsequent disfigurement, he assures us, is less than after removal of the lower wall of the sinus. It is quite conceivable, however, as Leopold Müller, Assistant in the Eye Clinic of Prof. Fuchs in Vienna, has also recently pointed out, that after such an extensive resection the brain is more exposed to injury, being protected only by the thin bony plate of the posterior wall of the sinus. In this connection, Czerny's method—although it has been applied as yet in only one case, but then with good and rapid result—has a very decided advantage and may consequently become the routine procedure. In future, we shall be more able to dispense with severe operations of this kind, when we systematically make an exploratory opening in the early stages of an affection which suggests suppuration in the frontal sinus. Such an opening is best made by means of the rotatory machine, is free from danger, and may be established from the middle of the second decade. In Lichtwitz's case which has been already mentioned, a wide opening in the orbital wall of the sinus would have led to recovery in a much shorter time, and would have been simple and quite justifiable. The case therefore proves most distinctly that under certain circumstances we can attain our end even without severe operations. The same might also be looked for if one or two small passages were bored into the frontal sinus, especially if the force pump were used ensuring a more thorough washing, and if attention were paid to the dietetic directions given above. Erysipelas after opening the frontal sinus, of which Lichtwitz is rather too afraid, should not originate outside the body but within it—not "exanthropes" but "enanthropes," as Zülzer expresses it; that is, the condition is brought about by damming and retention of a purulent or putrid secretion, analogous to the condition in putrid suppuration in the antrum described by me in 1888, and would demand the early enlargement of the artificial opening. Whether the introduction of a drain into the *canalis frontalis* after opening the sinus is really always necessary, seems very questionable; free scarification of the middle turbinate by relieving the walls of the canal will often restore its patency.

III.

The treatment of suppuration in the sphenoidal sinus has been elaborated upon Zuckerkandl's labours within the last ten years by M. Schæffer especially, also by Berger, Heryng, Roland, Bergh, Bronner,

and others. The simple probing of the natural ostium in acute cases is for the most part unnecessary, and in chronic cases almost always ineffectual, although it is not so liable to cause injury here as in the region of the frontal sinus. Laurent, besides, has succeeded in introducing a probe into the ostium without using a speculum and trusting entirely to feeling; these researches, however, were made on the dead body. It is just in this region that the value of injections through the ostium sphenoidale by means of the hollow sound recommended by Lichtwitz appears somewhat doubtful, for the return of the injected fluid cannot be looked for with certainty; part of it, however, might flow forward were the patient to lie on his face and provided there was no swelling in the neighbourhood of the ostium. When the diagnosis has been made with some degree of probability, the establishment of a counter-opening is to be preferred. This is best and most expeditiously done by means of the drilling-machine fitted with long points as already used for this purpose by Roland. A statement was recently made that, by means of an instrument introduced at the level of the middle turbinate, it is possible to open the sphenoidal sinus in twenty or more successive corpses with great certainty and without any injury to the neighbouring parts. Still, Herzfeld's investigations on cadavers yielded results which are not in accordance with this. He found that more or less damage may be done to the surrounding structures, that even the internal carotid may be injured, but of course only under quite exceptional circumstances. In addition, Fig. 11, which is

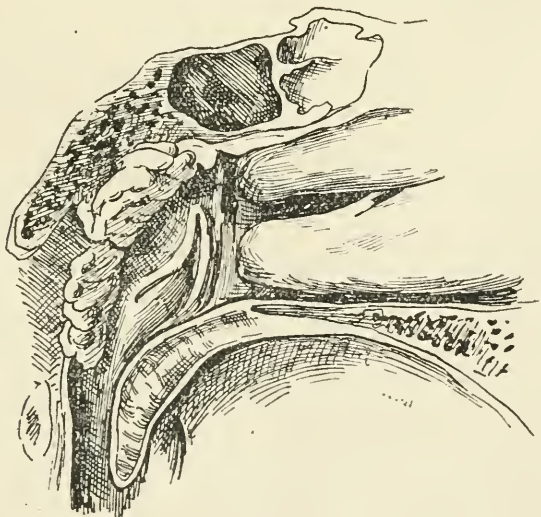


Fig. 11.

taken from Zuckerkandl's anatomy, shows that by proceeding in this manner we may encounter the basilar process and not the sinus. It is perhaps more advisable, in patients whose throats are roomy and easily palpated, after thoroughly cocainizing the nose, to pass the instrument along the inferior meatus, then, with the finger introduced into the naso-

pharynx to feel the alæ of the vomer, as is often possible, and by means of the instrument revolving round the transverse axis of the head, and with its point directed upwards, to enter somewhat in front of the ala; the sinus will thus be opened close to its lower wall.

As yet I have not performed this operation on the living subject. In a case of amaurosis or blindness of one eye, after its enucleation, it might be best to adopt Bergh's method, and enter the sphenoidal sinus by a convenient and certain pathway, through the orbit and posterior ethmoidal cells. In a young man who died in the lunatic department of the municipal hospital here in 1888, a considerable quantity of pus was present in one sphenoidal sinus, and in that only. This condition had given rise to kakosmia, of which the patient had often complained. Unfortunately, a rhinoscopic examination had never been made, his grievances having been regarded as an olfactory hallucination.

IV.

There is no branch of rhinology in greater need of improvement than that dealing with the treatment of suppuration in the ethmoid. If we take into consideration the number of cases observed and successfully treated by Woakes, Grünwald, Hicguet, Wingrave, Grant, and others, it is evident that there can be no doubt as to the occurrence of chronic circumscribed affections in this region. On the other hand, however, we must agree with those who hold that every roughness felt with the probe is not to be regarded as a certain sign of caries.

In accordance with the views lately expressed by Symonds, collections of pus situated above the middle turbinate should be scraped out through the nose only very exceptionally. When the suppuration is in the anterior cells the treatment may be pursued with less danger and more thoroughness by adopting the method of Jansen and Kuhnt, whereby the pus is reached through the frontal sinus after the latter has been opened externally. When the disease is located chiefly in the middle and posterior ethmoidal cells, the opening may be made from the orbit. This harmonizes with the observations of Schöler-Hartmann and others, and most recently of Raoult, who have seen abscesses of this kind burst into the orbit and run a favourable course.

In acute cases it is highly advisable to operate at an early period on such abscesses from the places mentioned, in order to prevent, as far as possible, their extension to the brain. In chronic suppuration of the ethmoid, however, it will often be preferable to provide a free exit for the secretion:—1. By removal of polypi that may be present in the nose. 2. By regularly syringing with unirritating substances, especially with the physiological salt solution. In order to make the injections more effective, Greville Macdonald causes the patient to hang his head backwards and downwards; this not infrequently produces headache, as he himself remarks. Several years ago I tried the following method:—Having cleansed the lower part of the nasal cavity, as well as possible by means of cylindrical tubes connected with the force pump and introduced anteriorly, the stream was then directed to the higher parts, through tubes bent at various angles, and passed into the choanæ, while the patient

lay face downwards, with his head low. Better, simpler, and quicker than this or Macdonald's plan is the following:—Having washed the nose very thoroughly by means of the force pump, both by the anterior nares and the choanæ, a long straight tube, closed at the point and with lateral openings, is introduced into the nose in such a way that when connected with the pump the stream is directed upwards.

So far, the patients who have been treated by me in this manner have had no headache either during or after the syringing. The method also has acted more favourably, and, from the patient's own sensations, more thoroughly than the simple washing from before and behind hitherto employed. Formerly, on making a rhinoscopic examination after washing, secretion was often found above the middle turbinate. It is evident, however, that this is only a palliative measure, for it is impossible to send the stream of water into all the recesses and fissures of the ethmoid. Nevertheless, it has the double recommendation that one can inspect a nasal cavity cleansed in this way more comfortably, and without being incommoded by the exhalations which proceed from many patients, and that it renders unnecessary the use of nasal brushes and similar playthings for the removal of crusts adhering to the mucous membrane.

Further, the frequent inunction at night of the external nose, its root and sides as far as the inner angle of the eye, exercises a favourable influence on the patient's condition, especially in disease of the ethmoidal cells. This method is effective, although borrowed from the medicine of the people. It acts principally by preventing the escape of moisture through the skin, in consequence of the pores becoming blocked with fat, so that there is an increased flow of fluid inwards to the mucosa, with thinning of the secretion, and a diminished tendency to inspissation. The washings described here, together with the inunction of the nose, completely replace the introduction of wool into the nasal cavity, a procedure which Voltolini rightly regarded as unhygienic, and which, it is to be hoped, will soon disappear from amongst our modes of treatment. In over-estimating the frequency of local affections of the ethmoid, some authors seem to have left out of account the influence of infective materials driven from the vagina into the nose during birth, as described by H. Weber, B. Fränkel, and other authors, which reach the mucous membrane of the entire nasal cavity, including, of course, that of the ethmoid.

Not uncommonly, several accessory cavities are simultaneously involved in a suppuration, as most recently observed by Grant. When dealing with a nasal suppuration, we must in the first place exclude the presence of a foreign body in the nasal cavity itself, and of a carious incisor or canine, causing a secondary affection of the anterior end of the inferior turbinate, as described by F. von Niemeyer, Ziem, Mendel, Dreyfuss, Czerny, and others. An exploratory opening and irrigation of the antrum is then to be undertaken, which, according to the observations of Ziem, Lichtwitz, Kelly, E. Schwarz, and others, may reveal the presence of pus, although none was visible on making a rhinoscopic examination. The frontal sinus is next to be examined by exploratory opening and washing.

If there is a persistent discharge from the middle meatus, we must consider whether a suppuration in the anterior ethmoidal cells is not also present. To determine this accurately in urgent cases, and when the patient is not satisfied with a mere improvement in his condition, one of the following operative measures will be necessary :—1. Resection of the anterior half of the middle turbinate, and examination with a little mirror to see whether the pus proceeds only from the frontal sinus and antrum, the openings of which can be rendered more distinct by injecting coloured fluid into the sinuses, from the forehead and alveolus respectively. 2. The extensive opening of the frontal sinus from without. 3. Opening into the anterior ethmoidal cells from the orbit.

Suppurations in the accessory cavities of the nose, which are so important, not only to members of one specialty, but to practitioners in general, will be more favourably influenced in future, both as regards frequency and severity, by careful attention to the following points :—The implication of the nose in many infectious diseases, the virus of which is either taken up directly, or, when acting on another part of the body, becomes localized in the nose if a circulatory disturbance is already present here ; care of the teeth, and strict supervision of the work done by so-called dentists, which is often extremely faulty and unsubstantial ; fulfilment of the requirements of public and private hygiene, mentioned in the foregoing survey, etc., etc. There is here still much to investigate and much to discover which will be of universal benefit when placed at the service of the community—

“ For if our virtues
Did not go forth of us, 'twere all alike
As if we had them not.”

ON THE COMPLICATIONS OF EMPYEMA OF THE ACCESSORY CAVITIES OF THE NOSE.

By Dr. L. M. LICHTWITZ.

Communicated to the Fifth International Congress of Otology, Florence, 1895.

THE affections resulting from suppuration in the sinuses ought to be known to the practitioner. Often, indeed, they are the only conspicuous features in the picture, while the cause which gives rise to them, the sinusitis, may escape observation. Dr. Lichtwitz's studies are founded upon 149 cases of empyema of the different sinuses ; 127 of these were affected with unilateral or bilateral suppuration of the same sinus, the remaining 22 had combinations of affections of different sinuses.

1. The complications may affect neighbouring organs.

The nasal cavities properly so-called : Pseudo-ozæna, 13 times ; small polypi of the middle meatus, 12 times ; caseous coryza, 3 times ; sensation of bad smell (cacosmia) in almost a third of the cases ; *naso-pharynx* (conditions formerly designated naso-pharyngeal catarrh or Thornwaldt's disease) ; *oro-pharynx* (tonsillar abscess) ; *ears* : recent or

old-standing suppurative otitis, 15 times; sub-acute otitis, 7 times; chronic otitis, 14 times; nervous tinnitus, 9 times; vertigo, 3 times; *eyes*: 3 cases of dacryo-cystitis, 2 cases of exophthalmos, 2 cases of partial atrophy of the optic nerve, etc.; *nervous system*: hemicrania, cephalalgia, frontal or occipital, feeling of weight in the head, 51 times (frontal and sphenoidal sinusitis furnish the largest contingent of this complication; tri-facial neuralgia in 4 cases of maxillary sinusitis); *skin of the face*: recurring cruris, 4 times; eczema of the orifice of the nose and on the lips, 5 times; acne rosacea, 5 times; oily seborrhœa of the forehead, once; erythema with œdema fugax, twice.

2. The complications may often affect distant organs.

Broncho-pulmonary apparatus.—In the first place there must be mentioned pseudo-phymia (pseudo-phthisis) found in seven patients in whom the diagnosis of tuberculosis had been made by very distinguished confrères. One patient affected with double latent empyema of the maxillary sinus presented all the symptoms of a pulmonary abscess, or of an inter-lobar pleurisy. In three cases an obstinate cough only ceased upon the evacuation of the affected sinuses, and in five sinusitis was accompanied by asthmatic attacks.

Affections of the digestive canal.—Dyspepsia, dilatation of the stomach, four times; obstinate diarrhœa, thrice.

Cardio-vascular disturbances.—One case of slowing of the pulse (28 to 32), which improved under nasal treatment; two cases of phlebitis of the lower extremities. The writer wonders if a case of aortic regurgitation, causing death, and the cases of albuminuria and of articular and muscular affections which he has several times observed, ought to be counted as among the complications of these chronic suppurations, or to be looked upon simply as coincidences. He is in favour of the former hypothesis, in view of the permanent absorption of septogenic materials.

3. *Modifications of the general condition*.—Weakness with emaciation, 10 times; fever, 4 times; insomnia, thrice; unconquerable diurnal somnolence, thrice; semi-cerebrasthenia, 4 times. In a boy, aged ten, affected with double sphenoidal sinusitis, there occurred such periods of loss of consciousness, analogous to the *petit mal* of epilepsy, with intense occipital headache, the symptoms disappearing simultaneously with the purulent affection of the sinus.

The treatment consisted in a regular evacuation of the pus and the prevention of its formation. In case of the maxillary sinus, the best plan was to open it widely, either through the alveoli or the canine fossa; in cases of the other sinuses it was sufficient to irrigate them regularly by their natural orifices to obtain improvement, or even a cure of the majority of these complications.

It is probable that among the complications which have here been passed in review some were merely simple coincidences, but in the great majority of the cases they must be considered as complications closely dependent on the empyema of the sinuses. The predominance of certain disturbances in this or the other subject is to be explained by individual predisposition.

Dundas Grant (Trans.).

CONTRIBUTION TO THE STUDY OF ADENOID VEGETATIONS.

By Dr. Y. ARSLAN (Padua).

Read before the Fifth International Congress of Otolaryngology, Florence, 1895.

AMONGST 4080 patients suffering from affections of the nose, throat, or ear, 426 had adenoid tumours in the naso-pharynx. Of these, 69 per cent. presented symptoms of nasal obstruction : 37 per cent. suffered with tonsillitis or pharyngitis : 59 per cent. had ear complications, of whom 110 were cases of suppurative otitis, and 142 were cases of deafness without suppuration. Amongst six deaf mutes affected with adenoid vegetations, two were benefited by their removal. Other complications were noted, such as bronchitis, laryngeal spasm, night terrors, stammering, nocturnal enuresis, and convulsive attacks. A case of Jacksonian epilepsy, thought to be of central origin, soon disappeared after operation. Of the 426 patients, 222 were submitted to operation. Of these, 125 were completely cured, 50 improved, and 47 were lost sight of. In only seven cases was a second operation called for.

From these complete statistics, I am able to draw some conclusions both as to etiology and treatment. Much importance is attributed to heredity and general diseases. In 60 patients, I was able to note traces of heredity. Dampness and other causes were of secondary importance. As regards direct complications, the operation is certain in its benefit. For reflex complications, the result is not so positive. It is advisable to operate even when the hypertrophied masses are of small dimensions. With a little patience, posterior rhinoscopy can be carried out in at least 74 per cent. of the cases. Disappearance does not always take place with age, for the growths were found in patients whose ages varied from twenty to forty.

Treatment consists in complete removal of all the hypertrophied masses. The operation should be completed at one sitting, so as not to expose the patient more than once to the consequences of an operative procedure, even although this is of no great moment. As already remarked, of the 222 cases treated, only once was it necessary to repeat the operation.

General narcosis should be employed, otherwise a simple operation is rendered complicated, long, and brutal, especially as the majority of our patients are children, in whom it is useless to expect complete docility. Besides, we require muscular relaxation of the mouth, palate, and naso-pharynx, in order to be able to work satisfactorily. The employment of cocaine is insufficient. Of the various anæsthetics, I give the preference to bromide of ethyl, which is, for short operations, incomparably superior to chloroform and ether. Indeed, bromide of ethyl is rapid and certain in its action ; it is harmless in the dose employed (ten to twenty grammes) ; it leaves no disagreeable consequences. The patients are able to return home afterwards by themselves, and they have neither vomiting, headache, nor malaise. One cannot say the same of chloroform nor ether.

Possibly, gas might do as well, but it is not so handy. In support of these views, I was able to collect 4161 cases of anæsthesia by bromide of ethyl, published by various authors, in which some unsuccessful cases were noted, but not one single death. Can we say the same for chloroform? I have given it 252 times, without ever seeing the least disagreeable symptom. It should be given by what is called the intensive method. Up to fifteen years of age ten grammes (two and a half drachms) are sufficient; above that age, a double dose can be used.

With regard to the method of operating, I am opposed to cauterizing, the electric curette of Rousseaux, forceps, the cold snare (Chiari); and limit myself to Gottstein's curette, which answers best of all. At the same time, I am accustomed, after finishing with the curette, to use the finger for scraping away any small granulations which may have escaped the cutting surface. In this way I am also able to satisfy myself as to the complete success of the operation. A warm nasal douche of boracic acid is then given, to act both as an antiseptic and hæmostatic. This method of operating only requires a few minutes, and in all my cases I never had the slightest accident. Until complete cicatrization, proved by repeated examinations, had taken place, I ordered boracic glycerine to be used several times in the twenty-four hours.

The prognosis is good. Nasal obstruction disappears. The healing of suppurating otitis, unless there is extensive caries, is hastened. In deafness without suppuration one nearly always obtains rapid recovery of the hearing. In adults, however, secondary lesions of the tympanum and ossicles may remain unchanged. Even in deaf mutes, when young and when their condition is consequent on adenoid vegetations, one may have good results. Frequently in the complications of reflex origin unexpected and brilliant results may be obtained.

Conclusions.—(1) In Italy this disease is fairly frequent. (2) The chief causes are heredity and general affections. (3) The operation should be completed in one sitting, employing Gottstein's curette followed by the finger. (4) Bromide of ethyl is the best anæsthetic for this operation. (5) Auricular affections are in great part due to adenoid vegetations, both during the period of development of the latter and during their retrogression. (6) In all cases where adenoid tumours have been diagnosed there should be no delay in their removal. (7) Before children are admitted into asylums for the deaf and dumb or similar institutions, they should first be submitted to the examination of a specialist, particularly with regard to the affection under discussion.

St. Clair Thomson (Trans.).

THE STATISTICS OF DISEASES OF THE EAR.

By Dr. HEIMAN (Warsaw).

Read before the Fifth International Congress of Otology, Florence, 1895.

FOUNDING on his clinical material in the hospital during the last seven years, which was made up of 2803 in-patients, 2203 polyclinic patients,

3387 men examined with regard to their eligibility for military service, and 268 deaf mutes, Dr. Heiman has arrived at the following statistical results :—

1. The frequency of ear diseases in soldiers; that is to say, between the ages of twenty-one and twenty-six years.
2. The mortality which these diseases occasion at that age.
3. The frequency of diseases in the different segments of the ear.
4. The therapeutical results.

Before enlarging on these different points, he makes the remark that he derives his classification chiefly from the hospital patients, and he considers this material is the most valuable for statistical purposes, for the patients of this class remain longer under observation and treatment, so that definite results may be obtained, while the polyclinic patients and those examined for other purposes have only a relative value from a statistical point of view.

A special table shows these relations very readily. The percentage of aural in-patients in proportion to the general number of patients in hospital (74,681) was 3·77 per cent. The total of all ear patients was 8·74 per cent. of all the hospital patients in general. The ear patients were derived from a body of men averaging from year to year 150,000, the proportion out of these being therefore 0·82 per cent. Dr. Heiman draws from his figures the conclusion that the opinions of Tröltsch and Bürkner, with regard to the frequency of the different diseased and functional changes of the organ of hearing, can have only a theoretical value, and that in a practical sense we have much fewer ear patients, as all the conditions of which these authors spoke, where the patient is little or not at all disturbed, cannot be looked upon as disease.

The mortality of all ear diseases amounted to 0·46 per cent., and the mortality among hospital in-patients to 1·38 per cent. The ratio of mortality in ear cases to the mortality in the hospital in general (2187), equal to 2·92 per cent., was 1·98 per cent. The mortality in diseases of the middle ear amounted to 1·50 per cent., in catarrhal and purulent middle-ear diseases 1·78 per cent., in purulent middle-ear diseases 2·19 per cent., in acute purulent median otitis 0·74 per cent., in chronic middle-ear suppurations 3·29 per cent., and, lastly, in acute middle-ear catarrh 1·43 per cent. Death was occasioned four times by cerebral abscess, three times by cerebellar abscess, sixteen times by meningitis, and sixteen times by sinus thrombosis and septico-pyæmia. (Three cases of pyæmia were cured.) Dr. Heiman is of opinion that the mortality numbers (0·3 to 0·5) are far too low, and that we can only determine the actual ratio when we confine ourselves to hospital in-patients. The mortality, according to Schwartz, is 4·74 per cent.; according to Barker, 2·5 per cent.; according to Bezold, 2·15 per cent. If the limit, according to Heiman, amounts to 1·38 per cent., it is to be explained by the limit of age of the patients, as also by the fact that among his patients there were found many who are ordinarily treated in a polyclinic. This last circumstance supplies, according to Dr. Heiman, an important factor in the determination of the mortality. The frequency of the different forms of ear diseases is set forth in a special table. From the totals of this table, it is found that

the ratio of diseases of the different segments of the organ of hearing is as follows :—

External ear	9.59 per cent.
Middle ear	88.59 „
Internal ear	1.82 „

These proportions differ from the results arrived at by other authors, also set forth in a special table. The extremes reached by various authors are the following :—

Outer ear, minimum	19.2 per cent.	(Schubert).
„ maximum	25.6 „	(Szenes).
Middle ear, minimum	59.0 „	(Schubert).
„ maximum	74.9 „	(Szenes).
Internal ear, minimum	2.6 „	(Wagenhäuser).
„ maximum	10.3 „	(Bezold).

Chauvel, with a similar material to that of Heiman's, arrived at the following :—

External ear	4.79 per cent.
Middle ear	87.45 „
Inner ear	2.76 „

that is to say, 7.76 per cent. tinnitus, otalgia, &c.

Dr. Heiman obtained the following results from treatment :—

67.98 per cent.	recovery,
18.77 „	improvement, and
11.87 „	uncured.

These numbers correspond pretty exactly to the results of other authors. The results have been set forth in a special table. In view of the different opinions of practitioners as to what is to be understood as cured, improved, and unimproved, it must be remembered that this is often very difficult to determine in the case of ear diseases ; and, above all on this account, that taking all possible care very much depends upon the statement of the patient, and that any attempt to arrive at uniformity in statistics must, to a certain extent, only be relative, the patient's reports being tinged a good deal by his own individuality, so that absolute scientific accuracy cannot be attained. *Dundas Grant (Trans.).*

A CASE OF OTITIC CEREBELLAR ABSCESS.

By Dr. T. H. HEIMAN (Warsaw).

Read before the Fifth International Otological Congress at Florence.

THIS is the seventh case of otitic cerebral and cerebellar abscess that Dr. Heiman has so far observed in his hospital practice. The patient presented himself two months previously in the in-patient department on account of what appeared to be meningitis. He had suffered for a year from right-sided otorrhœa. When Dr. Heiman saw him for the first

time there were well-marked symptoms of an abscess in the cranial cavity, and most probably in the cerebellum; the pulse was from forty-eight to fifty-two, and the temperature thirty-seven. He had intolerable headache, which was most marked in the right occipital region, vertigo, disturbances of co-ordination (the head oscillated from right to left, and from behind forward), persistent retching, constipation, difficulty in swallowing, retention of urine, slowness and difficulty in speech, optic neuritis, inequality of pupils, paresis of the right facial nerve and of the left extremities, exaggeration of the joint reflexes, apathy, somnolence, and general weakness. The patient was at once trephined. The abscess was sought for in the temporal lobe, contrary to Dr. Heiman's opinion. Although no pus was found, nevertheless a visible improvement took place, the apathy and somnolence disappeared, the paralytic symptoms diminished markedly, the retching ceased almost completely. However, after a short time things got worse again. Anti-syphilitic treatment was initiated, and opening of the mastoid with resection of the upper wall of the tympanic cavity was carried out; and, lastly, again the skull was trephined in the region of the right lobe of the cerebellum. All these procedures occasioned only a temporary improvement. No pus was found at the operation in the cerebellum, and the patient remained free from symptoms so far as the head was concerned.

Half a year before his death there came on, with left-sided otorrhœa, severe pain in the left temporal and parietal regions, which lasted for two months. When these symptoms disappeared the pain in the right occipital region returned. The patient was watched and treated for twenty-two months in hospital, and died at last of general and pulmonary tuberculosis. The autopsy revealed an abscess in the right lobe of the cerebellum and in the vermiform process, caries of the right petrous bone, tuberculosis of the lungs and of the peri-bronchial glands, pyopneumothorax resulting from the bursting of a pulmonary cavity, tuberculous ulcers of the glands of the intestines, and general marasmus. Dr. Heiman makes the following observations with regard to this case: The disease lasted in all three years. The abscess developed itself most likely two and a half years before death. The therapeutical and surgical methods of treatment had all the same result, in so far as they brought about a temporary improvement in consequence of the relief to the intracranial pressure. Dr. Heiman looks upon the tuberculosis as the result of the otorrhœa; that is to say, of the caries of the petrous bone, which was most probably of a tuberculous nature from the commencement, although later infection cannot be entirely excluded as the patient was in contact with tuberculous subjects for a considerable time. The abscess had nothing in common with general tuberculosis, and more probably it was the immediate result of the ear disease. The negative result of the operation on the cerebellum was due to the abscess being accidentally missed, and in no case could the presence of an abscess be excluded on account of it.

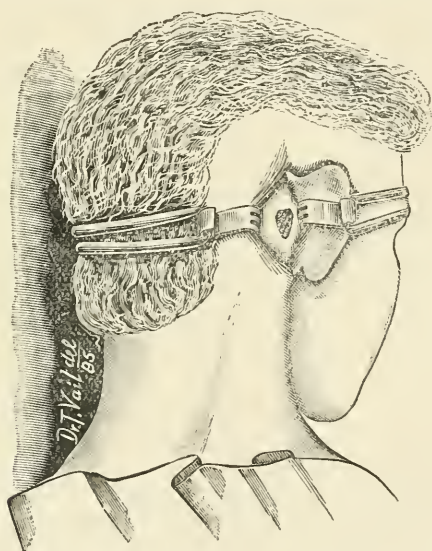
Dundas Grant (Trans.).

Dr. MAX THORNER'S NEW MASTOID RETRACTOR.

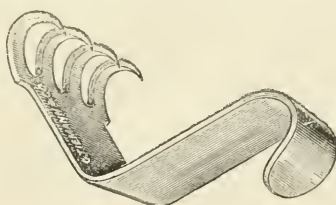
DR. MAX THORNER describes this instrument in the "Medical Record" for July 20th, 1895, and, as will be seen from the illustration, it consists of



a flat S-shaped piece of steel, about one and three-quarters of an inch long, and five-eighths of an inch broad. One of the extremities is shaped into a three or four pronged hook, while the other extremity forms a blunt, broad retractor, bent in the opposite direction. Two of these are employed in cases of mastoid operation, and are, no doubt, available in other parts of the body. The prongs are inserted below the periosteum of both lips of the wound, and a long strip of sterilized gauze is folded in its middle and passed over the blunt end of the anterior hook, drawn across the forehead, round the head of the patient, and fastened tightly round the blunt hook of the posterior retractor. The illustrations appended will make this



clear. When the amount of tissue to be held back by the anterior retractor is very great a special hook is employed, in which the pronged end is about one inch distant from the flat shaft. Thus:—



In cases in which the upper and posterior walls of the auditory canal have to be removed, and the auricle and the cartilagino-membranous canal is turned out, the posterior hook may alone be used, and instead of the anterior one, the strip of gauze may be passed through the meatus of the detached auricle. The advantages of this instrument are that it spares one, or may be two hands, so that neither these nor cross bars (as in Barth's retractors) may get in the way. The sharpness and curvature of the prongs give the instrument extreme security, and the breadth assists greatly in checking the flow of blood from the cut surfaces during the operation. Should blunt retractors be required, the non-pronged ends should be employed. The undersigned, having tested these practically in several operations for cholesteatoma and other mastoid diseases, can answer for their efficacy, and feels justified in recommending them most strongly to the notice of his *confrères*. *Dundas Grant.*

PROCEEDINGS OF THE LARYNGOLOGICAL SOCIETY OF LONDON.

Ordinary Meeting, October 9th, 1895.

FELIX SEMON, M.D., F.R.C.P., *President, in the Chair.*

The President, before the ordinary business of the meeting commenced, alluded in feeling terms to the loss the Society had sustained by the deaths of Mr. ARTHUR DURHAM and Herr HANS WILHELM MEYER.

Case of Congenital Syphilis of Palate and Larynx. Shown by Dr. LEONARD ROPER.

E. W., a girl, aged twenty-one, came to Guy's with the following history.

Six months ago she gradually lost her voice, which has been getting worse. Has been liable to sore throat, but never lost her voice before. At sixteen her upper front teeth loosened and dropped out. Three years ago sores appeared on the upper lip and right side of nose. She was treated at Gray's Inn Road for lupus. While in the hospital she contracted erysipelas of face, after which the lupus (?) cleared up. The ulceration of face lasted twelve months. At the end of this time two swellings appeared on right arm, and now the lower end of right radius is much thickened. She never had any eye trouble.

The soft palate and pharynx are greatly hypertrophied. The epiglottis is thickened and "truncated." The false cords are thickened, and there is some infraglottic swelling.

Dr. WILLIAM HILL said that the case much more closely resembled lupus than anything else, and he should require very strong evidence to convince him that the condition was due to syphilis.

Dr. DUNDAS GRANT had seen the case before, and had considered it lupus.

The PRESIDENT, Mr. BUTLIN, and Mr. STEWART also considered it a case of lupus, and the President suggested that it should be microscopically examined, and the results submitted to the Society.

Dr. ROPER, in reply, said no reference had been made to the swellings on the arm. There had been some slight improvement under pot. iodide. He would remove and examine microscopically a piece of the hypertrophic tissue.

Case of Tertiary Syphilis of Larynx and Nose. Shown by Dr. FURNISS POTTER, with Dr. LAW'S permission.

Henry G., aged twenty-eight, a carman, with a history of venereal disease three or four years, and sore throat about eighteen months.

He came to the London Throat Hospital on July 23rd, complaining of hoarseness, cough, and difficulty of swallowing solids. Slight dyspnoea. On examining him a large scar was found on the hard palate. Uvula was almost detached from velum, and had contracted an adhesion to the left posterior pillar of the fauces. The epiglottis had been almost entirely destroyed, a mere stump remaining. There was much infiltration and oedema of the ary-epiglottic folds and larynx generally; and this, together with much viscid secretion, rendered it impossible to obtain accurate details, but the rima glottidis appeared as a very small chink.

On the 25th inst. a much clearer view was obtained, the left cord being visible with some difficulty, owing to the view being obstructed by a large polypoid-looking mass which appeared to be attached to the stump of the epiglottis. There was also a smaller mobile hyperplasm in the arytenoid region. Pot.iodid. grs. x. and daily mercurial inunctions were administered till the gums became affected, then pot. iodid. grs. xx. thrice daily, with the result that the man has steadily improved, and he has now a fair-sized glottic opening.

Case of Cicatricial Obstruction of Anterior Nares. Shown by Dr. SCANES SPICER.

Mr. BUTLIN suggested a plastic operation by turning down a flap at the side of the nose. He had a case in hospital in which both nostrils were affected. He would bring his case and show it at the next meeting.

Dr. DUNDAS GRANT would suggest that if this operation failed, then the columna should be cut through, and a silver saddle inserted to raise the tip.

Case of Tubercular Ulceration of Septum of Nose. Shown by Mr. C. SYMONDS.

W. H. C., aged forty-eight, came to Guy's for "stoppage of nose and pain." Fifteen months ago had influenza. Soon after pain commenced, and a small pimple appeared in left nostril. This got better, but appeared again and got worse; he had at this time an offensive smell in his nose—he noticed it himself. One day on rising in the morning found his nose completely blocked. The smell now has ceased, and no odour can be detected. Has blown "casts" from his nostrils. Has been in Army,

and when at Malta was invalided for consumption. Passed into Navy and invalided out for chronic bronchitis. Declares he has never had syphilis.

Family history: Father died of phthisis; mother has phthisis now. There are no definite signs of phthisis in patient's chest.

Case of Tubercular Disease of Septum. Shown by Mr. C. SYMONDS.

A. H., aged sixteen, sought advice for blocked nostril, right side. Has had it blocked for eight months. Came on gradually; bleeds at times, especially after blowing his nose. Has no history of any injury. No pain at any time. No history of phthisis. Lungs healthy.

On examination there is a mass projecting from anterior part of cartilaginous portion of septum; pale, firm. Does not bleed readily. Left nostril has some ulceration on septum quite anteriorly. Larynx and naso-pharynx normal.

Mr. CRESSWELL BABER considered that the case of the boy was one of tubercular disease of the septum nasi, and should be treated by removal with snare, scraping, and subsequent cauterization with lactic acid or galvano-cautery.

Dr. C. BEALE mentioned a case of a tubercular patient in whom the nodular thickening in the nose dried up of itself without any treatment.

Dr. DUNDAS GRANT considered the case to be either tubercle or new growth, but thought the boy's general condition pointed rather to tubercle.

Case in which the Left Vocal Cord was removed for Cicatricial Stenosis. Shown by Mr. C. SYMONDS.

H., aged fifty. First seen some six years ago, when he was suffering from urgent dyspnœa. Immediate tracheotomy was performed in the scar of an old operation. He had been tracheotomized once before for the same trouble.

On examination the cords were red and swollen. Later several tags were seen on each cord and removed. The tracheal wound was closed, and patient resumed work. Again, four years ago, dyspnœa occurred, tracheotomy was performed, and later Mr. Durham divided the thyroid with a view of removing a supposed obstruction. After this latter operation he again came under Mr. Symonds' care, wearing a tube, and with great stenosis resulting from the irregular cicatrization, so that it was impossible to remove the tube.

In February, 1895, the thyroid was again divided, and the left cord with its muscles removed, leaving the arytenoid.

In September last, finding the laryngeal aperture sufficiently wide for respiration, the tracheal fistula was closed.

Now, October 9th, the man breathes well and his voice is improving in power.

Dr. C. BEALE wished to know if the voice was now produced by the ventricular bands.

The PRESIDENT thought the voice was produced by the cicatricial bands.

Case of Frontal Sinus Disease. Shown by Dr. WM. HILL.

Miss K. had previously been shown at this Society. She had then exhibited the classical signs of frontal sinus disease, but the chief symptom for which the patient sought relief was the profuse thick discharge of pus which flowed from the region of the nasal opening of the infundibulum. With the assistance of his colleague, Mr. Ernest Lane, the frontal sinus was opened by a vertical incision, exuberant granulomatous growths were removed, and the infundibulum dilated. The frontal wound was allowed to heal in the hope that the sinus would efficiently drain through the dilated and curetted infundibulum. In three weeks, however, there was pain, puffiness, and swelling, showing that the secretions of the sinus did not drain efficiently through the artificially dilated infundibulum. The wound was reopened, an Ellis drainage-tube inserted, and the patient was taught to pass a curved probe (as recommended by Luc) from the forehead through the sinus into the nose daily before using the syringe. Under this treatment there was no smell or excessive discharge, but directly the use of the probe was omitted, retention occurred. Dr. Hill proposed to enlarge the wound in the forehead and inspect the sinus again, and by some means so enlarge the opening into the nose as to ensure efficient drainage; it might be found necessary to remove a little more of the middle turbinal.

Dr. TILLEY and Mr. C. BABER suggested that Grünwald's method of removing the front wall of the sinus, packing the wound, and allowing the sinus to granulate up should be tried.

Dr. W. HILL, in reply, said that he would first try and carry out his idea of establishing good drainage into the nose. If this failed he would consider the suggestion Dr. Tilley and Mr. C. Baber recommended. The idea was, however, absolutely opposed to the general surgical principles which had hitherto guided us in the treatment of accessory sinuses, for we had regarded efficient drainage as indispensable. The disfigurement, too, must be taken into account.

Specimen of Carcinoma of the Larynx. Shown by Dr. KANTHACK.

Patient complained of stiffness and hoarseness in February, 1889, but did not seek medical advice till September, 1892. November 14th, 1892, tracheotomy was performed on account of severe dyspnoea, which greatly relieved him. Laryngoscopic examination showed a growth on right side of larynx, involving both false and true cords. December 24th, thyrotomy was performed, and a sessile growth removed from right half of larynx. January 23rd, 1893, much swelling of neck, edges of tracheotomy wound everted and ulcerated. March 19th, 1893, patient died.

The specimen shows that the whole larynx is completely filled up with the malignant growth, which also invades the whole peri-laryngeal and peri-pharyngeal region. The rapidity with which the growth has extended is striking, so that the question is how and in what manner paths are opened up for the dissemination of the growth by wounds?

Mr. BUTLIN did not think the splitting the thyroid had anything to do with the increased rapidity of the growth. It was not an uncommon

thing for malignant growths to suddenly take on increased action in the way of rapidity of growth.

Mr. BOWLBY had a case in which the thyroid was split for the removal of growth and was well united; but a few weeks after the cartilages were burst open, and a fungating tumour appeared in the neck.

Dr. S. SPICER asked whether the increased blood-supply and the more free anastomosis of the lymphatics had anything to do with the rapid increase of the growth.

Specimen of Carcinoma of Pharynx from a Woman. Shown by Dr. KANTHACK.

It shows extensive necrosis of the posterior plate of the cricoid cartilage, with ulceration of the pharynx, œdematous, swelling and infiltration of the arytenoid area.

Specimen of Diffuse Papillomatous Hyperplasia of Laryngeal Mucous Membrane in a Child. Shown by Dr. KANTHACK.

The whole surface is covered by numerous small warty growths, so that we have a verrucose condition of the mucosa, which must not be confounded with the condition described by Virchow as pachydermia diffusa. Tracheotomy had been performed during life, and papillomatous growths have sprouted from the laryngeal mucosa through and along the track of the tracheotomy wound, and appear outside at the skin opening.

Mr. BOWLBY said the patient had been under treatment for growth in the larynx. Tracheotomy had been performed, but there was no material stenosis. The child suddenly had a choking fit in the ward and died. Nothing was discovered *post-mortem* to account for the fit, which must be put down to spasm or some inspissated mucus.

The PRESIDENT had a case of papilloma. The growth was removed, but returned two years after, during pregnancy. Tracheotomy was performed; an abscess formed. The nature of the growth was changed. *Post-mortem* specimen showed carcinoma, and the whole of the walls of the abscess cavity were lined by the growth.

Specimen of Necrosis and Ulceration of Tip of Epiglottis, which occurred in the Course of Typhoid Fever. Shown by Dr. KANTHACK.

Dr. BEALE said it was an important point that these ulcers did not occur at the active stage, but occurred at the end of the disease. If due to the poison, why do they not occur at an earlier stage?

Mr. BUTLIN thought the ulceration was a perichondritis—a sequel to typhoid, same as periostitis in other parts.

Mr. BOWLBY had seen a case when the ulceration had occurred at an earlier stage—third week. There was great swelling of the larynx, tracheotomy was performed, and the patient still had to wear his tube on account of the stenosis.

The PRESIDENT said that evidently in some epidemics ulcerative throat symptoms occurred more frequently than in others. Greisinger found ulceration of the larynx in one in every five cases.

Specimens. Shown by Dr. FELIX SEMON.

1. *Large Nasal Polypi removed from the Right Nostril of a Lad aged Nineteen.*

The two polypi are remarkable for their enormous size, and also for the fact that they both were removed within three weeks from the right nostril of so comparatively young a patient, whilst the left nostril was quite free. The polypi did not show much in the nose itself, but were visible with the naked eye behind the soft palate, the naso-pharyngeal cavity being almost completely filled with the growths. The patient stated that when a boy of twelve he had some polypi removed from the right nostril, but had been free until about one and a half years previous to the present removal, which was effected in October of last year at St. Thomas's Hospital. The aggregate size of the two polypi shown would seem to equal, if not to surpass, the largest mucous polypi put on record.

2. *Tubercular Ulceration of the Soft Palate, Uvula, Right Tonsil, and Larynx.*

The patient was a young man, aged twenty-six, who died with general phthisis in St. Thomas's Hospital. The larynx was diseased previous to the palate, and the disease did not spread by continuity. The development of the tuberculosis of the palate could be followed from its very beginning, and it was not possible to check the disease by curetting and applications of lactic acid. In the specimen it is seen that the upper part of the epiglottis and the edges of the aryteno-epiglottic folds have been destroyed by tubercular ulceration, whilst the rest of the laryngeal cavity is ulcerated in different degrees from the same disease. In the cavity below the glottis extensive areas of the mucous membrane are destroyed, the posterior border of the soft palate and the tonsil of the right side are similarly ulcerated, the uvula is thickened and nodular from the formation apparently of tubercles in its substance.

3. *Large Laryngeal Papilloma.*

The specimen dates from the pre-laryngoscopic era, and has been preserved for a long time in the museum of St. Thomas's Hospital. The brief clinical history appended to it simply states that the patient, an adult, had suffered for several months from increasing dyspnoea, and finally died from suffocation. The papilloma springs from the anterior part of the right vocal cord, and fills the whole glottic cavity.

4. *Myxoma of the Larynx.*

The specimen is shown on account of the great rarity of laryngeal myxoma. The growth was situated in the anterior commissure of a girl, aged twenty-six, who came in October, 1893, to the Throat Department of St. Thomas's Hospital with the statement that she had been hoarse ever since she could remember. The growth, which looked like a bunch of granulation tissue, and was of the size of a cherry-stone, filled the anterior commissure of the vocal cords. It was removed without

difficulty, and on microscopic examination proved to be a true myxoma. No recurrence, so far as is known, has taken place.

The microscopic section will be shown at the next meeting.

5. *Syphilitic Endo-tracheitis.*

This specimen has already been shown by Mr. R. W. Parker before the Pathological Society of London ("Pathological Society's Transactions," vol. xxxvii., p. 119), but is again demonstrated on account of the great rarity of the affection.

The specimen represents two transverse sections of the trachea of a boy fifteen years of age, affected with inherited syphilis. There is a large amount of dense fibrous tissue produced in connection with the mucous membrane and submucous tissue, the lumen of the tube being at one part not more than a quarter of an inch in extreme diameter. The patient had been subjected to tracheotomy in consequence of a nearly fatal attack of asphyxia in 1877. In March, 1882, the tracheal fistula resulting was closed by operation by Mr. R. W. Parker. Some time later, the fistula having closed, an attack of catarrhal pneumonia set in, but did not prove fatal; death occurred, however, from a similar attack in February, 1885. After death the effects of the endo-tracheal inflammation were found to commence somewhat abruptly about an inch and a half above the bifurcation, and to increase in amount below. The lungs presented the appearance of extreme interstitial inflammation, and showed large tracts of dense fibrous tissue, in which lay groups of compressed alveoli; the smaller bronchial tubes and alveoli in the more peripheral parts of the lungs were filled with foetid pus.

Dr. C. BEALE stated he had a similar case of obstruction a few years ago, and, on looking through the records, found it always occurred at the lower end of the trachea.

THE BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.

October 18th, 1895.

President—MR. G. STOKER.

PRESIDENT'S ADDRESS.

Gentlemen,—My first words must be to express my high appreciation of the honour you have done me in electing me President of this Association. I conceive, however, that deeds more than words will testify to that appreciation, and it will be my best endeavour in forwarding the interests and prosperity of our Association to bear solid witness to my feelings of gratitude. It has sometimes been questioned whether inaugural addresses are at all desirable. Some have thought that the President's

address should be rather of a valedictory nature, and should be a summing up rather than an opening speech ; but in truth it would seem that, inasmuch as it is and should be the aim of each President to make his year of office the most successful yet on record, it is far better and more becoming to leave the recital of whatever success and prosperity there may be to one's successor.

It is a matter of extreme difficulty to select any subject or find any theme about which to speak on an occasion like this. I have had, I can assure you, hours and days of anxious thought about inaugural addresses, and I propose to give you the result of some of my meditations on this subject. Having passed through a student career, one's first ideas or remembrance of an inaugural address is, no doubt, the words of wisdom and advice which fell from the lips of the physician, surgeon, or lecturer who was selected to open the session at the medical school at which one studied. Such an address, directed to advice as to the best manner of conducting our studies, and to our general mode of life, mental and moral, would be quite out of place on an occasion like this. Besides, our specialty bears such a good moral reputation that it is quite unnecessary to do so. We do, perhaps, sometimes hear whispers ; but is it not true that the best and wisest are sometimes carried astray by under-currents of prejudice or jealousy ? And do not such conditions here and elsewhere arise from the inability of certain persons to regard the life and conduct of others except in the light of their own preconceived ideas, or do they not often arise by reason of want of knowledge of the facts that surround some particular incident ? Let us hear and judge all men not only with justice, but with the charity that covereth a "multitude of sins." And, first, what of our reflections about retrospective addresses : most interesting and most instructive, especially when delivered at such an Association as this is ? Dealing, as they must then do, with a more or less circumscribed area of professional knowledge, they are first of all a *résumé* of work done during the period they allude to. They bring our knowledge up to date, and leave us in possession of the latest advances in our specialty. Besides, they deal not only with medical science, but also with persons. In them we hear again well-loved voices, now hushed in death. They recall to our recollection those who walked and talked among us, who have since passed away. They serve to keep their memories green. They have, further, an influence on the future : the knowledge of the successes and rewards of those who have gone before should stimulate us to further exertions ; their rewards and successes may be ours shall we but earn them. And even as we have their successes to stimulate us, we have their errors to warn us. Let us follow the one and avoid the other. There are, however, drawbacks to this retrospective form of address which we must guard against. We must in them maintain a very even mind. In them there are great opportunities of unduly lauding our friends, and of neglecting or overlooking the works of those with whom we are not friendly or in accord ; and, further, being, as they must be, a *résumé* or a *réchauffé*, they limit to a sometimes alarming extent the field of original thought. But these are small drawbacks, and easily avoided, and of little moment in comparison with the interest, instruction,

and many charms that surround retrospective addresses. Of them it may be truly said :—

“ They’re crowned with wreath from angels’ fingers ;
In front bright hopes eternal rise ;
Behind, fond memory ever lingers.”

At first sight it might appear to some that what I would venture to call a technical form of address is desirable, but that is not my view. Such an address gives an opportunity for airing fads and laying down the law on disputed technical points, and this when no discussion is permitted. It offers a great temptation to be egotistical, and that is never a satisfactory circumstance—to one’s audience. Besides, technical addresses are sometimes wearisome and tedious ; they are analogous very often to listening to a sermon of forty-five minutes in which one differs entirely from the preacher’s interpretation of the text, and the exigencies of the situation prevent decently-conducted people from getting up and leaving at the end of the first quarter of an hour. I think technical subjects had better be kept for meetings after the inaugural address has been delivered. I may say I was on this occasion strongly tempted to give an inaugural address on a technical subject not altogether unconnected with the therapeutics of oxygen gas, but, my sentiments being as above indicated, I cannot conscientiously do so. But do not despair, gentlemen ; there is a good time coming.

Nor must the realm of prophecy be denied inaugural addresses. When reluctance to dip into the past exists, and when the present has no charms for us, we may be induced to “ rush in where angels fear to tread.” This form of address requires courage, if not second sight. It presents the advantage of offering great possibilities for originality, and, like its opposite, the retrospective, may become very egotistical ; there are so many points one may prophesy about, and eventually turn out to be correct, if we only give ourselves a sufficient time allowance. For instance, it is possible that before the close of the present century specialists will have agreed what is the best route by which to introduce their remedies into the antrum of Highmore, and, that being settled, they will, perhaps, by a general consensus of opinion before the close of the next century have quite decided what is the best way to get them out again. Then there is the question of the cocci that are now regarded as enemies of healing ; it may be that in the distant future, and under certain conditions, they will turn out to be friends. But enough of prophecy ; I am treading on dangerous ground. And then, gentlemen, there is the ethical form of address—a most difficult subject to treat, and one which generally ends by treading on everyone’s toes. There are some who have concealed in an inner chamber of their mind what they are pleased to call the shield of professional honour ; and they spend all their spare time, with a kind of moral chamois leather, polishing up this interesting piece of armour. But when it is produced in public, so bright is it that when the light strikes it, it casts beams into their own eyes, which effectually prevents them from appreciating, with any semblance of justice, the mote they conceive to be in their brother’s eyes ; and this supposed mote, in some instances, on closer examination proves to be *muscae volitantes*, the result of functional impairment of

the observer's mental vision. If the members of an honourable profession are not sensible of what their conduct should be, presidential addresses will do no good. If they are lost to a sense of their responsibility, and do mean things or act in unprofessional ways, then I regret to think that inaugural addresses will not reform them.

On the whole, I think ethical addresses are not satisfactory. They do not attract sufficient interest. A striking example of this was seen recently. I read an account of the proceedings of the ethical section of a Medical Association. It pointed out that this was the greatest medical combination the world had ever known, and that it had an ethical section ; that its members came from all quarters of the inhabited globe, and that it had an ethical section ; and that at a recent meeting it regretted that one of the most important ethical resolutions of the present day was defeated by eight to six. It is my belief that the considerations that govern the proper interpretation of our ethical responsibilities must be derived from sources of uprightness and honour residing within ourselves, and not from instruction and correction or censure from without.

And now, gentlemen, with all these and many other thoughts and possibilities in my mind and ever present before me, it is hardly to be wondered at if I hesitated to accept an office, however honourable it might be, which entailed an inaugural address. But I felt I should be most unworthy if I failed to accept the position. It seems to me that one is selected to fill such a position as I do now for one of three reasons : either because of scientific distinction, or of seniority, or because one has a record of faithful service rendered in the interests of the Association he is called upon to preside over ; and I believe it is for the latter reason that I was chosen. At the present era in the history of this Association I am especially proud to have been chosen for this reason, as I find in it the highest tribute to our success—that we have lived long enough and flourished sufficiently to reward with the honoured post of President one of our first Secretaries. After the, may I say, most remarkably successful meeting of last July, a new seal of success has been put upon our Association, and it is right and proper that this occasion should not pass without some reference to the labours of our ex-President, Dr. Whistler ; of the Honorary Secretary, Dr. Pegler ; of Mr. Lake, and the Council, who so well supported them. Theirs was, I am sure, a labour of love ; but it is not always that such labours are crowned with unqualified success. Surely our grateful thanks are given to them. We passed through a very difficult time at the commencement of our life. Our childhood was troubled, but progress since has been most satisfactory until now, and “in the full and noonday light our Association the impress of the fulness of a perfected manhood bears.” Being, as we are, the British Laryngological, Rhinological, and Otological Association, and the oldest association of this kind in the Kingdom, we can look with satisfaction and encouragement on all who, whether individually or collectively, labour in the same vineyard as we do. And now, on the threshold of my year of office, I wish to strike a note which is, I believe, in perfect harmony with the feelings of all our Fellows : the note is unity. I had occasion, some years ago, when returning thanks

for this Association as Secretary, to say that I thought one of the great benefits of such an association as ours is that it should teach us to forget self in our common interest for the development and advancement of our specialty—that all our personal feelings, for good or ill, should be left without our doors. Gentlemen, I have no reason, begotten of experience or otherwise, to change those views then expressed; nay, rather my belief in them has grown and strengthened with the advance of years. I feel sure that it is only by strict adherence to this line of life and conduct that we can ever hope to approach the border-land of that consummation the possibility of whose existence sages have doubted—in whose honour poets have sung:—"Each man's good shall be all men's rule; and peace lie like a shaft across the land, or like a line of beams athwart the sea, through all the circle of the golden year."

MR. LENNOX BROWNE: I rise to propose a vote of thanks for your admirable address, and, in doing so, would ask leave on behalf of the Association to express agreement with all you have said in appreciation of our late President, Dr. Whistler, who, by his special qualifications and relations with his fellows, was so peculiarly fitted to contribute to the success of our summer meeting, when we had visitors from all parts. We also feel delighted—I do especially, being one of those who have worked with you from the very first—to see you in the chair; and we know perfectly well that if in the coming year we are not all in a good temper, it will not be the fault of the President. We know equally well that a cordial reception and an impartial hearing will be given to all scientific communications.

DR. MCNEILL WHISTLER: Mr. President and Gentlemen,—Would that my voice were strong enough for me to express my thoughts as to the reference which you have made to my poor efforts during the past year, my appreciation for the most able address which you have given us this evening, and my congratulations to the Association that you occupy the chair, and that the welfare of this Society is so thoroughly ensured in your hands.

THE PRESIDENT: I am sure I am more grateful than I can express for the kind words which have fallen from Mr. Browne and my friend Dr. Whistler; and, as I said at the beginning, it shall be my endeavour to prove by deeds and not words how much I feel the responsibility you have been good enough to impose upon me.

Case of Paralysis of the Left Vocal Cord. By the PRESIDENT.

My first case is that of a man suffering from paralysis of the left vocal cord. The patient is the subject of syphilis, which he had many years ago, with all the secondary symptoms. He had a swelling on the side of his neck below the ear, which burst, but his troubles with regard to his larynx began a year ago last January, when his breathing became so difficult that he was admitted into the Oxford Infirmary, where tracheotomy was performed. Since then he has had intense dyspnœa, with great stridor and difficulty in breathing, both of which increased every few weeks. When we saw him, the left vocal cord was completely paralyzed; the right partly. He had great difficulty

in breathing, and was almost voiceless. No doubt there was some tumour or abscess pressing on the trachea at some portion of its course. The veins of the upper part of the left thorax were varicosed and enlarged, and there was great dulness in the chest just below the left clavicle. He became very much worse, and was brought up, and we thought that we should have to do tracheotomy again, but during the night something burst—as he described it—in his chest. He brought up about half a pint of pus, and was relieved almost instantaneously. Since that he has had paralysis of his left vocal cord. As long as the pus comes away from day to day his voice is improved, and breathing is pretty easy; but when the pus ceases to come he at once becomes bad in both these respects, which shows that there is some cavity there which fills and empties itself from time to time. The quantity of pus has diminished from week to week, and now his voice is fairly good. He still shows a good deal of pressure on the trachea, as evidenced by the stridor. Of course, he is taking the usual anti-syphilitic remedies.

A Case of Syphilitic Ozæna. By the PRESIDENT.

The second case which I have had the honour to bring before you is one of syphilitic ozæna, occurring in a woman of thirty-seven. It was very bad and very foul two months ago, when we first put her on this treatment by giving her inhalations of oxygen gas. I have observed, as I have said before, that in dealing with ulcerated surfaces of a very foul nature, we find that very rapidly on being subjected to the action of either the pure or diluted oxygen gas the surface assumes a healthy character. This patient was treated in this way, and the smell which had hitherto existed disappeared. What we did was to half fill a bag with air, which was purified by pumping it through lime water and Condyl's fluid. The bag was then filled up with pure oxygen. One nostril was plugged with cotton wool, and through the other a tube connected with the bag was passed, which she held in position, and was directed to breathe through her mouth. The results were most gratifying. When she came in there was an outcry from the other patients on account of the stench, but the cry ceased at the end of a week or ten days, because the stench ceased! The crusts and even the necrosed bone had no smell after the end of the first fortnight. Unfortunately for us, she is very near her confinement, and for that reason she decided to leave hospital, and no further treatment has been carried out. To-day there were a good many crusts in her nose, and although the smell was not entirely absent, yet anybody who took the precaution to smell her breath will agree with me that the smell was not at all as bad as in other cases under similar circumstances. I suppose the oxygen has some effect on the micro-organisms (which reside in the nose) in these cases, and serves to purify them. It was for the same reason that I ventured to suggest to Dr. Law the use of oxygen for antral disease.

Case of Double Antral Disease. By Dr. EDWARD LAW.

Dr. E. LAW: I have only one or two remarks to make in reference to this case, which was brought before the society last April. The patient,

as I then stated, is a fireman, and had been under treatment for six or seven years with a discharge from the antral cavities of both sides. Six years ago he had a tooth extracted from the right side and an opening made through the alveolus, and was recommended to syringe out the cavity. Twelve months later he had an opening made on the left side. Some time between the openings being made he had a polypus removed from his right nostril at Golden Square.

When I brought him before the society, in April, I thought the profuse muco-purulent discharge had been to a great extent kept up by too frequent irrigation of the antrum. I had very great difficulty in persuading the patient to give up, more or less, all treatment; but after first of all getting him to syringe out his nose with a little warm salt and water, he gave up treatment altogether. In April he had been several weeks with no discharge from the right side, and with the discharge from the left side very much diminished in quantity. I showed the case then in order to ascertain the opinion of the Fellows as to the desirability of closing the aperture on the right side, so that particles of food and other matter should not have the opportunity of passing into the cavity, and also as to the desirability of opening the left antrum from the canine fossa or inferior meatus. The opinion then expressed was that, as the man had undoubtedly derived so much benefit through the cessation of the treatment, it was desirable to give him a further trial, and I was asked to bring him again before the society. He has only syringed his right antral cavity once since the meeting six months ago. He has syringed it again to-day, and the fluid came through the nostril perfectly clear. On the left side he syringed out probably a teaspoonful of muco-purulent pus, but there was no foetid discharge.

Mr. Mayo Collier suggested that one might very easily close the apertures temporarily by putting in a piece of iodoform gauze or wool. I tried this treatment, but failed. The patient, who has been accustomed to syringe out his antrum, has tried and also failed.

The patient is able to do his work, but at times complains of neuralgic pains in the face, which he says are nothing like so severe or frequent as they were some twelve months ago. He has done no syringing for three months. Considering the history, that he has been under treatment for five or six years, and has only a slight discharge from the left nostril, which he only recognized after an interval of seven weeks, is it desirable, on the left side, to open into the antrum from the canine fossa, and on the right side to try and close the aperture in the alveolus by means of the galvano-cautery? He has had no treatment for six weeks, no discharge from his nose, no disagreeable smell, no discomfort whatever, except an unpleasant taste in the morning, which, of course, may arise from other causes.

Dr. DUNDAS GRANT: Dr. Law is quite right in considering that there is a time when syringing does more harm than good. I have often thought so myself, and I have, as I have before said, seen improvement follow the closure of the alveolar opening. Of course, it is entirely experimental, and I think in Dr. Law's case it has answered satisfactorily. I might just suggest the advisability of trying the effect of perforating with

Krause's trocar, which I have found sufficient for cure in some cases. In a great many it has not been sufficient; but in view of the fact that good results have been obtained, possibly Dr. Law's case might add another to these. In any case, it is a very excellent and easy way for the surgeon to syringe out the antrum, and as this patient would only require it at pretty long intervals, I think it is peculiarly a case in which it might be tried. Nobody can tell exactly what the condition of the lining of the antrum may be, and consequently Dr. Law would have to make a large opening in the canine fossa and curette, and this I think could well be delayed, while at the same time I think it must be recognized that the major operation does not ensure cure in every case.

Mr. BARK: My experience in these chronic antral cases that have been drained by an alveolar opening has been somewhat similar to Dr. Law's in the case he has shown us, and leads me to express the opinion that it is almost impossible to obtain the closure of such openings in cases which have been going on for years without resorting to what is termed the canine fossa operation. In this case, on the left side I would make a large opening through the anterior wall, for one usually finds where suppuration has been going on for years a thickened or fungous condition of the mucous membrane of the antrum, and this condition can only be treated with any hope of a successful result by a large opening and careful and complete removal of the fungosities by curettement.

Dr. HILL: If I personally were in the condition of the patient Dr. Law has brought before us, I think I should hesitate to allow anyone to open up the canine fossa just now. Although I strongly believe in the treatment—which is more or less radical—by opening the canine fossa, I think the patient is not very bad, the operation is a severe one, and it would be time enough to resort to it when his symptoms become a good deal worse.

The PRESIDENT: If I may say so, I think that with regard to operation I agree with Dr. Hill that it is to be avoided as far as possible. Curettements are not always satisfactory, and the patient is doing so well that it is a question whether it would be advisable to involve him in any risk which might not be for his advantage. I suppose I shall be accused of having "oxygen on the brain" as well as in the lungs if I suggest it should be tried in this case. Our experience has been that it has a very beneficial effect on suppurating surfaces. Its application is extremely simple, and if I could persuade my friend and colleague, Dr. Law, to embark on this very simple method I should be very glad. It could do the man no harm. The whole difficulty seems to me to be that there is an unhealthy condition of the mucous membrane, and the conclusion is that as long as this unhealthy condition exists so long will some opening be necessary.

Dr. LAW: I may say, sir, that the patient has settled more or less the mode of treatment. He distinctly states that he has had no discomfort for the last seven weeks, and objects to have his nose meddled with. At the same time, I have not the slightest doubt that if you would like to undertake the treatment of this case by means of oxygen, I shall be able to persuade the patient to carry out your instructions. However, I think

I should like to have him for a month or so longer under my care before it is tried. The treatment suggested by Mr. Mayo Collier has been undoubtedly very beneficial, and if carried out a little longer will probably cure the patient. I have the same objection with regard to oxygen as with Prof. Krause's trocar. It is one of those cases that will probably get well with simple remedies, and the good result would then be put down to the trocar or oxygen. If later there is still purulent discharge, I shall be very pleased to hand the patient over to Dr. Stoker.

The PRESIDENT hoped that the Fellows would have an opportunity of seeing the case again.

Case of Regeneration of Tissue after Turbinectomy. By Dr. WILLIAM HILL.

Dr. HILL: When I embarked on turbinectomy I was a little bit afraid that it might lead to atrophy. We hear on all sides that we must look forward to atrophy as a result of turbinectomies. I have shown this case to emphasize the fact that here hypertrophy has followed, and there has been a regeneration. It has been my experience to see a certain amount of regeneration, after about three months. I have done very few. I have always seen a little hypertrophy, and sometimes a good deal. In my opinion, it does not lead to atrophy.

Dr. DUNDAS GRANT: I have seen a great many cases, and certainly I have had no reason to suppose that atrophy followed. In fact, there was a case in which the regeneration was so very perfect that Mr. Carmalt Jones thought it was almost too large, and that he was justified in removing it on what, no doubt, was a good therapeutic indication, and provided the pathologist with the means of examining the tissue after its regeneration. The conclusion arrived at was that it was a really good imitation of a turbinal. It was a very good substitute, and I think we are justified in supposing that for all physiological purposes it does sufficiently well.

Mr. BARK: I have done this operation in a few cases, but only for complete nasal stenosis, and can corroborate what has been said.

The condition after the operation in my patients was exactly similar to that in the patient shown by Dr. Hill to-day.

Dr. HILL: I was rather prejudiced against this operation. I have only done it a few times, and then in extreme cases. I regard it as a very excellent operation indeed. It is comparatively easy to perform, and the results in my own hands have been very good.

Two Cases. By Dr. GRANT.

1. *A Case of Adherent Cicatrix of the Membrane partially loosened by means of massive injections of Paroleine into the Middle Ear.*

Dr. GRANT: My first case is one of sunken cicatrix in the posterior segment of the left membrana tympani. I was unable to make it bulge either by inflation or by means of Siegel's speculum, and the patient heard a whisper at eight inches only. Yesterday I injected paroleine through an intra-tympanic tube, and so loosened the cicatrix to a considerable extent from the inner wall of the tympanum, after which he was

able to hear a whisper at sixteen inches, which was of course more than double the hearing he had before. What I wish to do is to draw attention to what I think is a valuable use for paroline. With a simple catheter you could not get it to go in in bulk, but with a tympanic tube it can be forced in, and it is believed to be an absolutely aseptic fluid. I think there is a future for it, and I shall be glad to hear of the treatment being taken up by members of the Association.

Dr. HILL : I always dip the catheter in a weak solution of menthol and paroline. I suppose two or three minims would go into the mouth of the catheter. I do not know that I have seen any very brilliant results. I know when it has gone into the ear, because the patient feels pain if menthol is used. I shall certainly try the ordinary paroline, as Dr. Grant and Mr. Lake seem to speak so well of it, although I have never believed in it.

Mr. LAKE : I have used paroline for over two years, and I cannot say that I agree with Dr. Grant as to the necessity for using an intra-tympanic tube, because I have got very pretty results through the paroline, never using more than one minim. I have obtained better results with one minim than I have with any quantity above. Dr. Bronner wrote a paper in which he stated, I think, that one ought to put thirty or forty minims into the tympanum. I should have thought it was impossible, for I do not think it would hold so much. If one drops one minim into an Eustachian catheter, and applies the air douche, there is a fine spray. Also the Eustachian tube, if it has been previously blocked, becomes, after use of small injections, perfectly free.

Dr. GRANT : The methods which Mr. Lake and Dr. Hill have described are very well known, and my experience has been exactly similar to theirs. I was not, however, referring to this at all. What I referred to was a comparatively new application, a new principle in the employment of paroline. It is simply to exercise a sort of liquid pressure, so as to detach, if possible, by mechanical force, adhesion of the tympanum.

Dr. GRANT, in reply to Mr. Lake's question as to how much paroline he put in, said : I put in as much as I can get in ; in this particular case, I should suppose about half a drachm, of which a good deal did not go in, but ran back into the pharynx, and was swallowed.

The PRESIDENT : The catheter must contain a good deal.

Dr. GRANT : The intra-tympanic catheter would not hold more than three drops, and it requires a considerable amount of pressure to overcome the friction offered by that very narrow tube. I have, in a case in which there was a perforation, washed paroline right through.

2. *A Case of Cholesteatoma of the Mastoid.*

My other case is that of a man, aged twenty-two, who came to me complaining of great pain in his ear. In the meatus there was a large mass of epithelium in rolls and very much broken down, and some granulations projecting from the posterior wall. On introducing a very much curved probe, I was able to get above these granulations into what appeared to be a cavity in the mastoid region. I had hoped to show

the patient to-day, but I syringed out his external meatus yesterday, and I hear now that his temperature is up to 103. I have no doubt that I shall now have to open his mastoid, and shall probably bring him before the society at some future meeting.

Exhibition of Sections of a Rhinolith previously shown before the Association. By Mr. BARK.

Mr. BARK: Mr. President,—A few months ago I had the privilege of reporting and showing here a case of rhinolith. At that time I promised that after section I would again show the calculus, after deciding the nature and character of the nucleus. I now pass round the two portions of the stone, and, as you can see, the nucleus is a piece of slate, probably slate pencil, which must have got into the patient's nose a long time before she presented herself for treatment, for she had no knowledge as to how or when this occurred. From its appearance, I had anticipated the stone to be more friable than it was. It was divided by means of a small fret saw, with very little disturbance of the calcareous material surrounding the nucleus.

The PRESIDENT: I have only seen one or two cases myself, and the nucleus in these was a blood clot.

DISCUSSION ON THE TREATMENT OF MENIERE'S SYMPTOMS.

Opened by Dr. DUNDAS GRANT.

The combination of phenomena—deafness, tinnitus, and vertigo—understood by the term “Ménière's symptoms,” and formerly too often as “Ménière's disease,” may arise from many causes, and perhaps the least frequent of all is the very one to which the immortal observer who first described them considered them attributable. Without denying the great probability that a hæmorrhagic effusion into the semi-circular canals, as seen by him, is a very definite and even a fairly detectable cause, it must be allowed that, so far as clinical observation and deduction go, anatomical proof of our belief to that effect is completely wanting. Ménière's was a unique observation, and its value is greatly diminished by the very fact that death took place. Effusion into the semi-circular canals could not alone have led to a fatal issue, and we are driven to the conclusion that some other more serious condition was present, which would account for the result, and in great probability for some of the symptoms, which Ménière attributed to the lesion in the semi-circular canals. At the same time, from what we know by experiment of the functions of the canals, there seems every justification for the assumption that such a lesion as Ménière saw in the dead body would produce such symptoms as Ménière observed in the individual during life. Although forced to reject the term “Ménière's disease” as the general nosological designation for the cases we are considering, I do not think it too much if, in honour of the observer who first associated the clinical and pathological phenomena, we apply the name “Ménière's disease”

to those cases in which we can attribute the symptom-complex to a hæmorrhagic effusion into the labyrinth, whether or not these form only a small minority of the cases in which the symptoms arise. In other cases let us employ the term "*Ménière's symptoms*," not as a pathological entity but as a convenient and acceptable expression.

From all these considerations, it will be obvious that the subject for our consideration may be one of a much wider scope than we could desire. It is therefore necessary to limit it to a reasonable extent, and I propose to assume as a definition of "*Ménière's symptoms*" a condition of vertigo associated with deafness and tinnitus aurium, and arising from disease of the organs of hearing, and it is with this alone that I propose to deal in introducing this discussion.

The conditions giving rise to vertigo may be situated in any part of the nerves or centres connected with the maintenance of equilibrium, whether peripheral or central, and motor or sensory. Among these, we may enumerate derangements of the motor nerves of the eye, producing erroneous ideas as to the relation of the body to surrounding objects; defective muscular sensibility in locomotor ataxy, conveying erroneous impressions with regard to the amount of muscular efforts being made, or requiring to be made; toxic, congestive, or anæmic conditions of the cerebrum, upsetting the judgment as to the position of the body, and weakening the power of initiating the necessary movements by conscious effort; irritation or destruction of the co-ordinating centres in the vermiform process of the cerebellum by tumours or other morbid conditions; abnormal and inopportune stimulation of these centres, by way of any of the numerous sensory nerve lines leading to them, and especially the vestibular branch of the auditory nerve, when either its peripheral extremities in the internal ear, or its trunk in the interior of the cranium, are irritated in any way.

The disturbance of equilibrium produced thus by irritation of the nerves of the labyrinth is what we are chiefly concerned with, though we cannot leave out of sight the possibility of almost identical symptoms arising from irritation of the intra-cranial portion of the vestibular nerve.

Ménière's symptoms may depend on—

A. Disease affecting the auditory nerve directly:

- (a) In its intra-cranial course.
- (b) In its labyrinthine distribution.

B. Disease affecting the auditory nerve indirectly from accessions of increase of tympanic pressure due to—

- (a) Catarrhal indrawing of the membrane.
- (b) Pressure of granulations on the stapes.
- (c) Unopposed over-action of the tensor, from—
 - 1. Antero-inferior perforation.
 - 2. Paralysis of the stapedius.

C. Hyperæsthesia sensoria et acoustica.

The treatment must then depend very materially upon the localization of the lesion, but it must be admitted that in many cases the nature of the lesion, whether constitutional or local, must determine the general lines

of treatment. Thus in *congestive* conditions we may resort to the application of cold to the head, derivation towards the feet, intestines, skin, and kidneys, abstraction of blood either generally by venesection in the arm or locally, by leeching over the tragus or mastoid, or by free incision or even excision of the inferior turbinated body ; lowering of the diet and avoidance of excitement ; further, by compression of the vertebral arteries and the administration of bromide of potassium or hydrobromic acid. Depressants may be administered with advantage ; in gouty cases colchicum and iodide of potassium ; in climacteric cases, bromides and small doses of nitrite of amyl and nitro-glycerine ; and in general, in full-blooded and otherwise vigorous persons, pilocarpin, more especially when the degree of disturbance of hearing indicates a considerable labyrinthine lesion.

In *anæmic* forms we have to put an end to any direct loss of blood or other source of weakness, and to restore at the same time the qualities of the vital fluid and the tone of the depressed nervous system. Hence we administer suitable food, judicious stimulation by means of spirits or sound red wine, and iron in any of the most assimilable forms ; further, strychnia in the alkaloid or in tincture of nux vomica in large and increasing doses. To Mr. Lake, I understand, is due the credit of adding small doses of chloral to counteract the distressing twitching which large doses produce, instead of leaving off the drug and losing the effect of its continued use. It is, however, with respect to the deafness rather than the vertigo that this point arises. Among other important precautions are the cessation of suckling and of imperfect diet, two potent causes of the anæmia of the labyrinth. In such cases all depressing therapeutic agents, such as colchicum, iodide of potassium, and particularly pilocarpin, must be strictly avoided.

In *hæmorrhagic* effusions, rest both physical and mental is most urgently indicated, with the combined objects of avoiding further effusions from mechanical disturbance and of lessening any injurious effort on the part of the patient in struggling to maintain equilibrium and practise co-ordinate movement, as well as of allowing the accompanying mental confusion to subside. At the same time sudden changes in external air pressure are to be carefully guarded against (witness the occurrence of labyrinthine hæmorrhages in caisson-workers), as also of temperature (note the frequency with which the subjects of Ménière's symptoms have been workers in hot places—stokers, bakers, laundresses, etc.).

Acute inflammatory affections would call for the use of the methods recommended for the congestive form, due attention being given to the circumstances under which they arise, namely, their relation to infectious fevers, apt to be complicated by naso-pharyngeal and tympanic diseases, so that appropriate local antiseptic and surgical treatment may not be unduly postponed, or the valuable timely use of pilocarpin be not prematurely initiated. In mumps the latter drug may be employed throughout ; in depressing fevers its use, or at all events its full use, must be postponed till the patient's general strength is restored.

Neuro-vascular disturbances, producing transitory "Ménière's symptoms," call for nerve sedatives and tonics according as exaltation or

depression are most marked. Thus, bromides, valerian, and camphor on the one hand, and strychnine, phosphorus, and arsenic on the other, may be called for, the predisposing conditions and exciting causes—excesses of various kinds, periods of life, etc.—being duly considered. I have not seen the well-marked cases such as Prof. Politzer has described, and have not practised the so-called “galvanization of the sympathetic” which would seem so irresistibly indicated.

Arterial tension with arterio-capillary fibrosis may produce attacks of vertigo almost identical with Ménière's, and may be mistaken for them, but the condition may form an element of both predisposing and exciting influence in the production of actual labyrinthine vertigo, and no conscientious aurist can leave it out of view. In such cases avoidance of meat-diet and the exhibition of iodide of potassium are called for; and, as Dr. Stephen Mackenzie has pointed out, when the physician's finger on the pulse detects an increase of tension or the patient perceives the first sign of renewal of the symptom-complex, a calomel aperient should be at once administered.

In vertigo arising from an affection of the *intracranial portion of the auditory nerve*, the general principles already laid down must apply, according as the condition arises from meningitis, new growths, aneurism, syphilis, or other less frequent causes.

When the affection producing the vertigo is one affecting the *labyrinth directly*, it must be treated according to its nature, whether anæmic, congestive, hæmorrhagic, or exudative, inflammatory or syphilitic, according to the general principles already laid down.

The typical “*Ménière's disease*,” a *sudden non-inflammatory exudation into the labyrinth*, calls in this place for a more detailed consideration. At the onset, the points referred to with regard to rest must be strictly attended to, and bromides freely administered. As the vertigo gradually diminishes, which it usually does in a few days, as, indeed, experiments on the semi-circular canals of animals would lead us to expect, iodide of potassium may be given, and pilocarpin, unless contra-indicated, injected, especially if the deafness is the most prominent symptom. Should the attacks recur, the precautions inculcated with regard to arterial tension are to be carried out. If the annoyance and persistence of the vertigo overshadow the inconvenience caused by the deafness and tinnitus, resort must be had to quinine, and small doses dissolved in hydrobromic acid have often an excellent effect, while Charcot's large doses should be administered if the vertigo is severe and obstinate.

In the *inflammatory labyrinthine* effusions pilocarpin is, as I have said, of unquestionable value when not contra-indicated by debility, either pre-existing or arising from some simultaneous infective fever.

Of *vertigo arising from indirect irritation of the labyrinth*, little need here be said, if we accept the unquestionable evidence, notably that of Prof. Gellé, that the most typical Ménière's symptoms may arise from disease of the middle ear, affecting the stapedio-vestibular articulation. So striking is the pathological evidence, that Gradenigo, in Schwartz's hand-book, gives to this condition the appellation of “*Ménière's disease*,”

rather than to the labyrinthine affection to which Ménière himself attributed the symptoms.

Vertigo is not so frequent a symptom in cases in which we believe there is stapedio-vestibular arthritis, nor are the signs of stapedio-vestibular arthritis so frequent in cases of vertigo, as such, that I should go so far in this direction. With Prof. Gruber, I should append the phrase, "with Ménière's symptoms," to the diagnosis of sclerosis of the middle ear, or ankylosis of the stapes.

(a) In Ménière's symptoms with chronic middle-ear catarrh I have usually found *indrawing of the membrane* with tubal catarrh, the membrane being often atrophied or in part cicatrized. Restoration of ventilation is the primary indication, and in case of atrophy or relaxed cicatrix the various forms of appropriate treatment, collodion, multiple incisions, or cauterization, the two latter being of no avail until the tubes are free.

(b) A *granulation* pressing from time to time on the stapes has, in at least one case in my experience, caused the most intense vertigo, which ceased on the granulation being removed.

(c) The *unopposed action of the tensor* is seen in cases of large inferior reniform perforation or cicatrix. It is known that the radial fibres of the membrane, notably in its inferior part, oppose the indrawing action of the tensor. In the event of their destruction the tensor readily brings about an increase of pressure at the fenestra ovalis, with consequent increase of deafness, tinnitus, and often vertigo. The rational treatment here is primarily tenotomy of the tensor, an operation all the more strongly indicated when synergic action is producing enfeeblement of the other ear. Paralysis of the *stapedius* is believed to allow of a similar action. Apart from its occurrence as part of a paralysis of the facial from cold, I have no data for its treatment.

Lastly, as it is obvious that in many cases the local causes above described are present without any degree of vertigo sufficient to merit the name of "Ménière's symptoms," I made or borrowed for it the name "pseudo-Ménière's disease." Such being the case, we must recognize a *hyper-sensitiveness* to stimulation of the vestibular nerve, and probably of the general sensorium, as a necessary factor in the production of vertigo from middle-ear disease, and to this our treatment has most particularly to be directed. Thus, over and above the regimen best calculated to restore the general nerve tone, we have to administer according to circumstances bromide of potassium, small doses of strychnine or nux-vomica, arsenic in increasing doses, cod-liver oil, and *consolation*. But there is one empirical prescription of the utmost value, and that is quinine itself. The most wonderful effects on the vertigo are produced by small tonic doses of that remedy in the forms of pseudo-Ménière's disease I have described.

The request that I should open this discussion came to me so late that, exhausting as this narrative may be; it has not exhausted the subject, and stands much in need of the timely "boiling-down" I could have wished to submit it to. At the same time its very obvious shortcomings may lead to the discussion of many interesting points left untouched by me.

Dr. MACNAUGHTON-JONES : I have to thank you, Mr. President, for the compliment you have paid me in asking me to join in a discussion on such an important subject as Ménière's disease. Following on the lines of Dr. Grant's paper, I think you will agree with me that, if we begin to consider all the causes which may produce those characteristic symptoms generally associated with Ménière's name, we shall have to commence with the external meatus and find our way back through the whole labyrinth of otological science. We must discuss all the secondary effects of pressure on the labyrinth, and the treatment of the exciting causes of these would carry us through every condition which Dr. Grant has touched upon. I recently read a short paper at the British Medical Association on a typical case of Ménière's disease and its classical symptoms. I have long been of opinion, and I am sure you will agree with me, that the term "aural vertigo" is most loosely applied, and that we have often wrongly associated with that term Ménière's name. I think that, though we have no strict pathological, anatomical, and physiological grounds on which to differentiate the various forms of vertigo, still that we have, clinically, arrived at a time when we can isolate those characteristic cases to which we ought to apply Ménière's name.

I consider that, in discussing Ménière's disease, we ought to confine ourselves strictly to those intra-labyrinthine causes which are most in our minds when dealing with direct pressure on the nervous elements in the labyrinth, increased tension in its arteries, or an effusion, due to recent inflammation or otherwise. We need not go through the various causes in the middle ear which may produce these symptoms. We want to isolate those symptoms which have peculiar clinical bearings not only, indeed, on the ear, but on the general condition of the patient who suffers from them—those constitutional states which pre-exist before the onset of the sudden symptoms which lead up to the final seizure that ends in Ménière attack. I myself distinctly prefer to limit the association of his name. I quite agree with Dr. Grant in what he says with regard to middle ear trouble. Unfortunately, we cannot in many cases get pathological appearances to verify our opinions, which are dependent upon past experience, and in which past pathology would indicate that we have an intra-labyrinthine effusion. We cannot say in what part of the labyrinth it has occurred, but we can generally affirm that it is an effusion, and that it is an intra-labyrinthine effusion. If we talk about tumours and other causes, here again we find ourselves landed in difficulty. I would mention the particulars of a case before referred to. The patient was perfectly deaf in one ear ; deaf to every possible test. He had been so for some considerable time. His other ear remained healthy. He had had a slight attack of facial paralysis. We know that by some authorities these cases of facial paralysis, with Ménière's symptoms, are kept distinct from Ménière's *disease*. The facial paralysis passed off, and one day, as he was travelling in a tram car, suddenly he heard a noise as if he were passing through a tunnel, and simultaneously he became deaf. On reaching home he vomited freely, and vertigo followed. The man remained in this condition until I saw him a month or so after the attack. His state

then was as follows :—He could not write his name and could not hold a pen (a pretty characteristic symptom of Ménière's disease). He could not stand without support. When blindfolded and made to turn round, he had a tendency to fall towards the affected ear. These are the group of symptoms which I believe to be characteristic of typical labyrinthine hæmorrhagic effusion, and which is of an apoplectic character in the great majority of cases ; and it is to such cases I think we ought to limit the term of Ménière's attack or Ménière's disease. No doubt, in other cases, there is lymph effusion—cases as proved by Politzer's classical cases, and as occurs in some syphilitic cases. I think it is safer to keep our ideas of Ménière's disease confined to such typical cases as this one I have referred to. It is very important to note the increase of arterial tension ; and also of great importance is the age of the patient. The typical examples do not occur in young people. They are occasionally met with in specific cases, but the patients are, as a rule, advanced in life. Therefore, when we find people who suffer from slight attacks of vertigo in the street, who have slight tinnitus on and off, we may judge that we are likely to have in such patients, with rigid arteries, an attack of Ménière's trouble. But what I wish particularly to refer to is, that in these cases there is great importance to be attached to the treatment previous to the first attack, and which is indicated by these prior and characteristic symptoms. Dr. Grant referred to several points of treatment. I shall simply confine myself to the form of disease which I have specially alluded to, and not to those collateral conditions which arise in almost every case of ear disease. I think our pharmacopœia is very limited—in fact, in some cases I doubt if we do any good by anything we give. I believe that the typical cases are just those in which that much-abused remedy, pilocarpin, renders good service. There are cases in which large doses of iodide of potassium do good, and again cases in which we find benefit from bromides and hydrobromic acid. And I would say that iodide of potassium, in combination with bromide of strontium and ergot, has appeared to me to be in some cases a good combination. Dr. Grant has said he finds quinine useful. Personally, in many of these cases I do not like to try it until a certain time has elapsed, for I think it may possibly cause mischief by the labyrinthic hyperæmia it undoubtedly produces.

I will not take up more of your time now, for I have already occupied it much longer than I intended, but I quite realize the importance of the subject which Dr. Dundas Grant has brought forward. I feel that we want to be more exact in speaking of Ménière's disease, and that the time is coming when we shall be able to differentiate the various forms of aural vertigo, and have them more accurately and clearly classified.

DR. DUNDAS GRANT : I think that those who heard what Dr. Macnaughton-Jones has said, and what I said myself, can see that our views are practically, I might say absolutely, identical. The importance of pulse tension, which Dr. Macnaughton-Jones referred to, was a point to which I endeavoured to draw attention very strongly. It must be borne in mind that cirrhosis of the kidney produces forms of vertigo which are very apt to be mistaken by a specialist for Ménière's disease.

With regard to the limitation of the subject, it is interesting to read Charcot's historical case, which was actually a case of chronic suppuration of the middle ear, and, no doubt, if we saw it here we should call it a case of "pseudo Ménière's disease;" and it was in such a case that this wonderful result of quinine was obtained. I quite agree with Dr. Macnaughton-Jones that these large doses of quinine should not be given as a matter of routine in all cases; but at the same time, if the vertigo so overshadows the other symptoms that relief must be obtained even at the sacrifice of the hearing power, then large doses of quinine may be given, but not otherwise. I thank you for the kind attention you have given to the paper, and I much wish I had been able to make it more complete by describing several cases, which I always regard as one of the most valuable additions that we can give to a discussion.

In reply to Dr. Law's query as to the desirability of extraction of the stapes for Ménière's symptoms, I have no experience to offer, but I have found in the few cases in which patients have come under my care on account of vertigo that milder means have sufficed. Moreover, in some of the reported cases of stapedectomy the operation has been credited with setting up vertigo. Extraction of the incus or section of its long process is probably the most justifiable surgical procedure.

A Case of Keratosis Obturans. By Mr. LAKE.

When the external auditory meatus in middle-aged and elderly people becomes blocked up with cerumen, which is not removed within a reasonable time, a secondary affection is caused by the continued irritation of the wax, and a chronic desquamative dermatitis, which is practically a dry scaly eczema, though the exclusion of atmospheric air diminishes the irritation which one would otherwise expect to be present. This desquamation proceeds until the internal portion of the canal is entirely filled with a mass of dead, closely packed, laminated epithelial cells adherent to the most superficial layers of the cuticle. When this occurs, deafness, which has been marked, becomes much more so in that ear, and the entrance of a small quantity of water during ablutions will often complete this—as it does in simple impaction of cerumen—but it may, and not unfrequently does, add a most unpleasant and distressing symptom, *i.e.*, a mild form of melancholia; this only occurs in patients whose neurotic tendencies are fairly well marked (Roosa). I have seen three instances of this quite recently which resembled cases of melancholia that recovered after the removal of impacted cerumen, but not, as in these cases, instantly.

Case 1.—A. B., a highly nervous professional man, called one day in a state of acute depression closely allied to melancholia; he had been but partly relieved of deafness due to keratosis by another gentleman, but since the syringing, etc., more or less pain and tension had been present, which had added to his distress. Fortunately the previous attention had loosened the plug, which I show; and his subsequent behaviour was, for about ten minutes, closely allied to hysteria, and with immediate return of cheerfulness.

Case 2 was a business man who, naturally somewhat taciturn, had

become rapidly more so, and at the same time deaf. The removal of the mass in his case was done by the method I am about to advise, and when all was removed he rapidly recovered his former state, and wrote a few days later : "I can do more work in one hour than in one week before my ear was attended to." His work was entirely mathematical calculations. In both cases one ear only was affected.

In treating this affection one has, firstly, to remove the mass, and then to attempt to prevent its subsequent re-formation. Naturally, syringing with hot water is the first thing to be done, but by its means alone one rarely manages to remove the deeper part, and if one succeeds it is usually at the expense of considerable pain to the patient, and has been accompanied by damage to the membrane ; so after persevering for some time without success, I prescribe a collyrium of salicylic acid, dissolved in glycerine and water by the aid of a solvent. The acid must not be too strong or it will cause pain, and, in fact, it is always better to anticipate this and add a little morphine to the solution. This is dropped into the ear with a medicine dropper two or three times in the twenty-four hours, and the head kept on the pillow with the affected ear upwards, in order to allow the solution to permeate the mass, and in a few days the syringe will remove the partly dissolved material easily. I am personally very much averse to any attempt at immediate extraction by means of forceps and blunt cures, as the suffering, though usually temporary, is very acute, and when people have been deaf for months a couple of days more is of no great moment, if, by so doing, pain is avoided.

Regarding after treatment, that which in my hands has yielded the best results is painting the meatus very carefully with a ten per cent. oleate of lead ointment, with lanoline as a basis ; this may be done by the patient either with a camel's hair pencil or a cotton wool mop, the pencil or mop being only just greased with the ointment, otherwise an accumulation of ointment in the meatus will result. One or at the most two applications in the week are ample.

The PRESIDENT : It would be interesting to know something with regard to the frequency of these attacks. My own experience is very small ; in fact, limited to one case, and in that case there was the condition which Mr. Lake has described, plus an unnatural quantity of hair, which rather complicated matters. The ear gets stopped up once in six months, and is relieved by a few drops of warm oil dropped into the ear for three nights before being syringed.

Mr. LAKE, in reply to Dr. Pegler, said he used—

R. Acid Salycilæ	20 grs.
Borax	25 grs.
Glycerine	
Water	āā 3p.

Dr. EDDOWES : I should like to ask Mr. Lake if he noticed whether there was any eczema in these patients. The condition of keratosis among skin cases is often strictly localized and sharply defined. I ask the question chiefly because I have met with so many skin eruptions in

which the external auditory meatus has been involved. This is especially the case with seborrhœic eczema.

THE PRESIDENT: In the case I alluded to, certainly there was no eczematous condition in the ears.

FRENCH SOCIETY OF OTOTOLOGY AND LARYNGOLOGY.

May, 1895.

(Continued from p. 776.)

HELME. *Adenoiditis.*

The author thinks that the subject of adenitis of the pharyngeal tonsils has not received sufficient study. Two conditions may be presented—either inflammation of a pharyngeal tonsil scarcely increased in size, and under antiseptic means all symptoms may subside; or inflammation upon a tissue already hypertrophied with anfractuous folds. It is in the latter condition that chronicity most frequently results. The first effect of inflammation is to exaggerate all the trouble to which adenoids give rise, or to cause their sudden appearance if they did not exist before—fever, shivering, and painful swelling of the angulo-maxillary glands, noises in the ears, and cephalalgia. There is diffuse redness of the pharyngeal mucous membrane, with muco-pus descending over the posterior wall of the pharynx. This condition lasts two or three days, and either subsides or passes into the chronic stage. Adenoidites are produced by the acute coryzas so frequent in subjects with obstructed noses. They may also arise as a spread of inflammations of the mouth and pharynx, and consecutive to dentition, as well as in infectious diseases—measles, scarlatina, etc. They cause auricular, pulmonary, and gastro-intestinal complications, and symptoms of cachexia from absorption of pus in the cavum. The treatment differs little from that of acute tonsillitis—rest in bed, diet, purgation, disinfection by benzo-naphthol and hydrochloride of quinine, nasal washes, gently made, or nasal inunctions with iodol or dermatol ointments. Isolation is necessary. In chronic forms, besides the ointment, insufflations of aristol powder should be used. Any serious functional complication demands operation.

GELLÉ remarked that, in arthritic adults and in certain patients at the menopause, he had observed tinnitus consecutive to adenoidites cured by a few swabbings of the vault.

LUBET-BARBON shared Helme's idea that it was necessary to apply the same surgical methods to the pharyngeal as to the palatine tonsil. He was, however, systematically opposed to nasal washes on the ground of contaminating the ear. It is much better to wait for some days, abstaining from all useless and possibly dangerous washes, and when the acute inflammation has subsided to intervene more actively.

MOURE strongly condemned treatment by the seaside. It is a regular rule to send children to the seaside to tone them up. He had often

seen young subjects with adenoid vegetations return from the seaside with otitis.

HELME condemned nasal douches, and shared Moure's opinion as to the ill effects of sea air, recalling the fact that Gellé had a long time ago pointed out the same thing.

DUNDAS GRANT. *Persistence of Nasal Suppuration in spite of Prolonged Treatment.*

The author recalls the fact that often the affection of a sinus cannot be cured because several of them are simultaneously affected. He related a case in which nasal suppuration continued in spite of treatment of the affected frontal sinus, the patient being only cured after opening of the maxillary sinus and treatment of an unrecognized sinusitis. In another case it was the opposite. In yet another case it was irrigation of the sphenoidal sinus and curetting of vegetations of the middle turbinated which cured the sinusitis, which had been treated ineffectually by ordinary means.

MOLINIÉ. *Dry Laryngitis.*

The author is of opinion that dry laryngitis may be primitive and occur independently of any lesion of the nasal pharynx; it ought to be considered as an attenuated form of tracheal ozaena. It is probably of parasitic nature and caused by Loewenberg's coccus, which cannot be considered as the exclusive factor in ozænic fetidity. In the case, quoted at length by the author, there had been an attack of influenza; there was aphonia, crusts were seen in the larynx and trachea, the arytenoid region was covered with mucus, and the laryngeal mucous membrane was thin, dry and atrophied. There was not the least vestige of affection of the nose or pharynx, and no odour from the crusts. Large cocci, often in pairs or chains, were found, and in some preparations large bacilli (Loewenberg's microbe).

FAUVEL. *The Employment of Solutions of Chloride of Zinc in Nasal, Pharyngeal, and Laryngeal Affections.*

For thirty years the author has used daily more or less concentrated solutions, and in general the following solution:—

Chloride of zinc	1 gramme.
Glycerine	25 grammes.
Distilled water	25 „
Hydrochloric acid	30 drops.

One in thirty drops of cocaine are added if the patient is impressionable. He regards it as the best astringent, preferring it greatly to nitrate of silver.

MENDEL. *Chancriform Ulcerative Tonsillitis.*

Besides the classical form, there is another lesion of the tonsils, which the author has observed six times, a kind of tonsillitis of cold evolution, which has been deceptive to the most distinguished syphilographers. The patient experiences on one side of the throat slight dysphagia at

times other than deglutition. A few days previously he may have observed a small ulceration on one tonsil. This is circular, with a congestive zone, more or less deep, whitish, and, in fact, a tonsillar sphacelus. The edges are indurated. There are slightly enlarged maxillary glands. There is generally no fever. The ulceration remains stationary a little, then repairs in variable time, not often more than a week. In one of the author's cases it was three weeks. Treatment consists in iodine applications and boric gargles.

The diagnosis might be of tuberculosis or syphilis, and the latter might be tonsillar chancre or gumma. In tonsillar chancre there is great cervical glandular enlargement; in chancriform tonsillitis adenopathy exists, but is at its minimum, consisting of only two or three slightly-developed glands, rolling under the finger. It lasts only about a week, chancre taking six weeks to develop. Gumma would be preceded by other signs of syphilis, but in doubtful cases the duration of the lesion and efficacy of treatment would settle the diagnosis. The ulcerations of hereditary syphilis are rarely limited to the tonsil. It much resembles a herpetic lesion of which the vesicular stage has been passed unperceived. The author cites six cases.

MOURE. *Acute Ulcerative Lacunar Tonsillitis*. (Published in *extenso* in the JOURNAL OF LARYNGOLOGY, October, 1895.)

JOAL recorded a case of tonsillar ulceration, which he was inclined to think tubercular. Dr. Thorne thought it to be syphilitic, but Prof. Fournier rejected all idea of syphilis. Probably it was only lacunar ulcerative tonsillitis.

HELMÉ cited Garel's sign—viz., that prolonged dysphagia constitutes the characteristic of syphilis in pharyngeal affections of doubtful diagnosis. When dysphagia lasts more than three weeks it is certainly a syphilitic lesion.

POYET had seen cases resembling those described. They resembled tertiary syphilis, and were all improved under iodide.

MOURE: Tonsillar chancre cannot be mistaken. In herpes, too, there is intense dysphagia, rapid evolution and disseminated lesions. It is not so with tertiary lesions, and he believed that the ulcerations described had a lacunar origin.

MARTIN had been embarrassed with similar cases. Happily the cure of the patient had generally arrived to put an end to his doubts.

CASTEX: The diagnosis of tonsillar chancre is not always so easy as Moure believes. In epitheliomas with ulceration the differentiation may be very difficult.

CASTEX. *Critical Remarks upon some Rare Cases.*

1. *Mouth and Pharynx*.—The author has seen three cases of ulcerations or imaginary tumours of the tongue; three cases of hypochondriasis with very slight hypertrophy of the tonsils or pharyngeal granulations; a case of papilloma of the base of the tongue; many cases of odynphagia due to lingual tonsillitis, and a case of tubercular ulceration of the right tonsil successfully treated by lactic acid.

2. *Larynx*.—He has seen oftenest in young subjects, between ten and twenty, vocal raucity without being able to assign any certain cause. The vocal cords, although remaining white, seemed thickened, and bulged out towards the median portion of their inner edge. Anti-scrofulous treatment has given no result.

In four cases of laryngeal tuberculosis he has observed eunuchoid voice of exceptionally high tonality. These patients had almost exclusively tubercular chorditis.

In tuberculosis of the larynx he has very often seen, at the commencement of the second stage, reduplication of the free edge of the cords, which ulcerate in their constant contact. It looks as if a small gouge had been passed along the free edge of the cord. He thinks that intra-laryngeal treatment should be avoided, giving only hot sprays of antiseptics to reduce congestion. He believes in lactic acid or camphorated naphthol; in the second stage, arytenoidectomy and curettement; in the third stage he uses antiseptic sprays.

Most of his laryngeal tumours were fibromas, the origin of which he looks for in vocal fatigue.

In several cases of laryngeal cancer originating in the sinus pyriformis the course was slow, and there was no adenopathy.

He has met with some cases of hysterical aphonia in both sexes cured at one sitting by suggestion, or exercises of elocution or vocalization.

Cases of vocal fatigue are very common in his practice. In some of these patients complaining of veiled voice, loss of acute register, or fatigue in speaking, singing, etc., he had found signs of apical tuberculosis.

2. *Nose*.—He attributes hypertrophic rhinitis to a general condition, principally the strumous diathesis, some local cause, or influenza.

He has often seen the atrophic form coincident with the hypertrophic, as if there were two stages. Erysipelas of the face often complicated his cases of ozæna, and he has seen one case of the latter with superficial ulceration.

He does not confirm Chiari's statement of the most common lesion in recurrent epistaxis being ulceration or varicosities of the antero-inferior part of the septum (twenty-two out of twenty-five—Chiari). In thirteen cases, this was the site in only five. He has seen two cases of fracture of the nose complicated with suppuration.

As to adenoids, he thinks that numerous children are supposed to have adenoids who have only a scoliosis of the septum, or the vault lowered in the antero-posterior axis, or even a posterior wall prominent in front from an exaggerated projection of the atlas and odontoid apophysis. The posterior wall of the vault is often the site of adenoids.

Large hot antiseptic irrigations with Weber's syphon may dispense with surgical intervention by disembarassing the patients of intense adenoiditis with small vegetations. He uses Schmidt's cutting ring of small diameter and favours bromide of ethyl.

3. *Ears*.—He has seen five cases of median otitis and internal sclerosis due to hereditary syphilis, a case of chronic dry median otitis in an ataxic patient, and a case of Voltolini's otitis with meningitis, ending in deafness, in a girl four years of age.

Patients are often seen with supposed affections of the ear which are really due to affections of the neighbouring parts (tempero-maxillary arthritis, rheumatism, etc.). Otagia is often met with in patients with bad teeth, after cured median otitis, or in hysterical patients. Phenic glycerine (one in ten) is well supported in otorrhœa usually.

A case of trephining the mastoid and opening the attic, in which neither pus nor tumour was met with, caused all the morbid symptoms to disappear.

5. *Other Organs.* — He has seen several cases of œsophageal epithelioma with adductor paralysis of the vocal cords, and one case in which the voice was bitonal.

One case, a young man of sixteen, was seized with singular crises, swelling of the thyroid gland, exophthalmia, palpitation, and nasal hypersecretion. They occurred after meals and ceased of themselves. There was a slight degree of hypertrophic rhinitis.

HELOT had often seen alterations of the voice in young subjects after measles.

JOAL remarked that after measles and its bronchitic complications there was generally tracheo-bronchial adenopathy, which was the cause of paretic vocal affections.

POYET had often observed raucity after scarlatina and measles, and had observed a defect in the approximation of the vocal cords.

CASTEX had not in his cases observed the genetic effect of measles. He attributed them to the scrofulous diathesis.

MOURE had treated similar cases, in which the larynx was diffusely red, or it was limited to the more or less swollen arytenoid region. It was to this tumefaction that he attributed the vocal troubles.

HAMON DU FONGERAY. *Methodical Tamponning of the External Auditory Meatus by Iodoform Gauze, as a means of Treatment of Inflammatory Affections of the Ear, and especially in Suppurations of the Tympanum.*

The author uses tampons of three or four thicknesses, three centimètres in length and one broad, placed over the tympanum, and filling the whole meatus without being compressed too much. Otorrhœas are quickly cured. If after ten applications there is still suppuration, there is a grave affection of the ear.

BONAIN. *Mucous Polyphi and Sarcomas of the Nasal Fossæ.*

A boy of thirteen had a large nasal polypus of the inferior turbinated, which was removed by the cold snare, and the patient cured. There was a history of cancer in the family, implicating a maternal grandfather, probably a maternal uncle and aunt, and a cousin. Two months after treatment the polypus had recurred. There were three subsequent recurrences and removals. Then, about eighteen months after the first operation, there was swelling of the lachrymal sac and obstruction of the left nasal fossæ, caused by considerable development of the inferior turbinated. Fearing sarcomatous degeneration, Rougé's operation was decided upon, the degenerated turbinated being removed, and parts freely

curetted. In less than a month a new tumour appeared. Further operation was not agreed to, repeated hæmorrhages occurred, with facial pains, and there was enormous tumefaction of the nose and superior maxilla. The left eye was closed, and large sarcomatous vegetations projected from the nostril; gradual enfeeblement was followed by death four months afterwards. Histologically examined, the tumour proved to be a myxo-angio-sarcoma.

The author discusses at considerable length (see "Revue de Laryngologie et d'Otologie, July 15th, 1895) the etiology, reviewing the cases hitherto recorded.

WAGNIER. *Two Cases of Bilobed Subglottic Polypi.*

This rare form of fibroma has given rise, in the cases observed and operated upon by the author, to a series of very interesting symptoms: in particular the almost complete integrity of the sound of the voice in spite of the size of the neoplasms, the vocal cords being placed during phonation between the two lobes, and the sudden interruption of speech when the upper lobe was projected into the glottic chink.

JOAL. *Two Cases of Anosmia cured by Douches of Carbonic Acid.*

The author refers to the unsatisfactory nature of treatment of these cases, recording two original cases of patients with anosmia for eight or fourteen months cured by the employment of carbonic acid gas used as a nasal douche. The author draws attention to the irritant effects at first, later resolvent of carbonic acid when applied to the nasal mucosa. With nasal douches of this gas he has seen excellent effects in vaso-motor affections and the arrest of acute coryzas, and in hypertrophic rhinitis. The treatment can be followed by a very simple process, which consists in inverting a syphon of seltzer water, allowing the escape of the quantity of liquid which is above the extremity of the interior tube, and adapting to the outflow tube a caoutchouc tube fifteen to twenty centimètres long, ending in a nasal canula. When the canula is in the nostril, and the tap is opened, carbonic acid enters the nasal fossæ. This is a simple therapeutic method recommended by the author at the commencement or during the course of a common cold.

MOUNIER. *Electrization in certain Auricular Affections.*

Electrization ought to be practised during the decline of certain affections of the ears as a good means of restoring the auditory functions; induced or faradic currents ought to be used in preference to continuous currents, the former being especially serviceable for the feebleness of the muscles of the middle ear produced by inflammation of the tympanum. The patient tolerates the faradic current more easily, which gives neither vertigo nor vomiting, and does not cause, like continuous currents, any burning of the meatus.

GAREL. *Two Cases of Primary Chancre of the Nasal Septum.*

In the first case there was obstruction of the right nostril and a small ulcer on the lower part of the septum, cupulated, but the edges not cut. The base was covered with brown crust and the mucous membrane

swollen. Mucous patches were found on the tonsils, and a macular syphilide on the skin. The nasal ulcer was a classical *ulcus elevatum*, surrounded by a swollen and red zone.

In the second case there was nasal obstruction, abundant discharge of thick yellow matter from the left nostril, and persistent cephalgia. There was whitish ulceration surrounded with a red elevated zone on the anterior portion of the septum. Garel, thinking it tertiary, administered iodides, which apparently cured the patient; but eight weeks after the first visit mucous patches and roseola appeared, from which it was evident that the initial lesion was a chancre. Both cases were probably infected by the finger-nail.

MOLL. *The Treatment of Acute Affections of the Accessory Cavities of the Face.*

The author does not desire to localize acute affections of these cavities, which is both difficult and not necessary for his method. He refers to the methods of treatment of Hartmann and Ziem, which he considers to be irrational. He describes his method of negative pressure, which he obtains by enlarging the thoracic cavity with the mouth and nose closed. The accessory cavities of the nose participate in the negative pressure of the chest; the nasal pharynx and nose are emptied and equilibrium re-established. Painful neuralgic, etc., symptoms disappear, and the local condition being improved, chronic affections or true empyemas are not produced.

HELME and LERMOYEZ. *Asepsis in Otology, Rhinology, and Laryngology.*

Bacteriology shows the resistance of certain microbes, but the absorbent power and delicacy of the mucous membranes of ear and nose render antiseptis almost impossible, from the danger to which patients are exposed from the absorption of certain substances. It is necessary to practise rigorous asepsis, which comprises four points.

1. *Asepsis of the Surgeon.*—It is better to touch diseased surfaces only with instruments passed through a flame or perfectly sterilized. Asepsis of the finger exploring the cavum ought to be absolute.

2. *Asepsis of the Patient.*—This is easily obtained in the ear by washing with soap, alcohol, or corrosive sublimate; indispensable before paracentesis. The nasal mucosa is of itself bactericidal; but if there is pus present, antiseptic washes of pheno-salyl, one in one thousand, with a pinch of chloride of sodium, are sufficient.

3. *Asepsis of Instruments.*—For metallic instruments, sterilization in the stove by steam is the best, or boiling in alkaline solution (carbonate of soda, one dram; water, one hundred grains); for non-metallic instruments, twenty-four hours' resting in a cold solution of one per cent. pheno-salyl.

4. *Dressings* ought to be sterilized in boiled or distilled water; cotton wads in the autoclave, or in a flame of boric alcohol; cocaine ought to be prepared with a phenic solution (one in two hundred).

VACHER called attention to the properties of cyanide of mercury, which does not injure instruments when used in solution in boiling water

RAUGÉ asked the opinion of Helme as to post-operative tampons in intra-nasal operations.

HELME replied in favour of obturation for at least the first three or four days. There is no reason to fear tamponning, practised as it ought to be, which insures drainage—far from hindering the flow of pus.

RAUGÉ: The author remarks that it is extremely rare to see in the living subject the *orifice of the maxillary sinus*, which, however, he has been fortunate enough to do in an ozænic patient with a tendency to extreme atrophy, specially of the posterior part of the right nasal fossa and the nasal pharynx. The middle turbinated, being reduced nearly to a merely projecting band, left the channel of the infundibulum entirely open, this channel being itself largely open and exposed in consequence of atrophy of the cruciform apophysis; and the ethmoidal bulla disclosed a wide-mouthed opening, which permitted its exploration to the bottom, and on this base the orifice of the sinus was seen. The extreme largeness of the nasal pharyngeal cavity and muscular inertia rendered prolonged examination very easy.

ONODI. *A Case of Lipoma of the Tonsil.*

In a little child a small growth appeared on the left tonsil, which had gradually enlarged, and on examination was found to be one centimètre in length and one centimètre broad—pale yellow and pedunculated. It was removed and examined by Dr. Charles Munnich, and the whole growth was found to be composed of fat. This is the first lipoma of the tonsil recorded.

MOURE. *Laryngo-Tracheal Perichondritis, with Abscess.*

The patient, a woman of twenty without hereditary disease, was attacked on December 20th, 1894, with influenza. On the 25th she was seized with pain in the left side of the neck and painful deglutition. Palpation of the epiglottis; the left side was painful. The whole laryngeal region then became swollen and very painful, the larynx being nearly doubled in size. Laryngoscopically the larynx was occupied by translucent swellings, the left vocal cord being hidden. Subsequently a swelling from the cricoid to the first tracheal ring was seen. The next day there was expectoration streaked with blood, the patient became better, and the swelling of the larynx gradually subsided until, about a fortnight afterwards, she was quite recovered, deglutition and voice being normal as before the influenza. The acute course of this perichondritis with abscess is worthy of notice.

POYET. *Vocal Nodes in Singers.* The author reviews the etiology in symptoms of this condition, and insists much upon the chronic irritation of the free edge of the cords, due to vicious vocal production and the habit which some singers have of pushing and forcing the voice—especially the chest voice. Effort soon becomes necessary, attack is defective, and always preceded by a little whistling due to the passage of air across the lips of an incompletely closed glottis. Repose, which ought to be absolute, is necessary, and the method of emission ought to be corrected. The author has obtained cure by cauterizations, especially with salicylic acid. He advises also extirpation with forceps, guillotine, or knife.

RAUGÉ : These cases resemble pachydermia, which Virchow has wrongly made a distinct disease.

HELME : Chiari has recommended great prudence in the removal of these nodules—he abstains when they are not of considerable size.

EGGER : When little nodules impede phonation, their extirpation is indicated, and gives rise to no accidents ; when they are larger, their removal may, as Chiari says, be followed by prolonged aphonia, explained by the defect of accommodation of the cords ; but this objection has no importance, the subject being already deprived of his voice.

POYET knew a tenor from whom Chiari had removed a very small nodule, which he should not himself have interfered with.

ASTIER. *The use of the Curette in the Treatment of Nasal Stenoses.*

The author believes that this instrument is neglected too much. For two years he has employed it for the removal of septal spurs, reducing enlarged turbinateds, curetting ethmoidal bullæ, etc. He has them of four sizes—No. 1, seven millimètres in diameter ; No. 2, six millimètres ; No. 3, five millimètres ; No. 4, four millimètres, mounted on a solid handle. Hæmorrhage, sometimes abundant, is easily controlled by tampons of iodoform gauze. He describes a case in which he removed a large spur by this means.

ONODI. *A Case of Isolated Paralysis of the Left Lateral Crico-Arytenoid Muscle, consecutive to Influenza.*

The patient was a woman, aged thirty, who, in the course of a severe influenza, was attacked with difficulty of deglutition and respiration. All the soft parts of the larynx were swollen, the thyroid cartilages and epiglottis being tumefied. After resolution the voice remained hoarse, owing to the paralysis. It was cured only after several months, after many repeated electrizations.

COMBE and DUBOUSQUET-LABORDERIE. *Double Orbital Tumour simulating a Malignant Tumour, due to Infection of Nasal Origin.*

A man, aged thirty-five, presented double sarcomatous induration of both orbits, with considerable chemosis of the conjunctiva. The eyes were immovable, surrounded by intense chemosis, accompanied with ectropion and subconjunctival ecchymosis. There was a hard projection forming a semicircle above the eyes. The lachrymal glands were involved in this mass. The whole had appeared within ten days, without any pain. There was a slight ozænic odour, but nothing abnormal in the nose, pharynx, or ears. The spleen was hypertrophied, there was albuminuria and alteration of the blood. Subsequent examination revealed the existence of two non-plastic masses filling the nasal fossæ, of which the turbinateds were atrophied. These, when removed, proved to be soft vascular fibromas covered with suspicious cylindrical epithelium ; a myxomatous stroma, forming a vascular bud covered with a layer of cylindrical cells, the most superficial having vibratile cilia, and containing zooglæa masses of a microbe not cultivated. Under antiseptic applications and arsenic the symptoms rapidly disappeared, and the patient was

cured. Prof. Panas attributed cases of this kind to a slow infection—allymphadenia, of unknown origin. The authors do not hesitate to attribute the condition to an infection, at first local, which threatened to become general, and of which the origin is to be found in ozaena and polypus masses, which the patient suffered from, the infection being propagated to the eyes by the venous anastomotic system or the lymphatics. It must be admitted that there exist, besides orbital productions of a malignant nature, other benign productions having great clinical analogies with the former, which appear without clear cause, and are cured under suitable treatment. As Panas remarked, it is not necessary in these doubtful cases to declare the condition incurable and to hasten to operate. These symmetrical orbital tumours do not always commence, as Panas remarks, in the lachrymal gland, but rather above and towards the internal angle, where the induration first appears. At the same time are observed glandular enlargements, hypertrophy of the spleen, increase of the white corpuscles, etc. Etiologically, symmetrical tumours of the orbits are caused by divers infections, having their point of origin from the nose, tonsils, etc. A treatment is necessary to discover a place of entry; nose, pharynx, tonsils, ears, uterus, etc.; to intervene and obtain disinfection, and also general antisepsis. Internally, arsenic and iodide of potassium should be administered so long as the latter does not congest the eyes. Failing this, oily injections of biniodide of mercury may be employed. Arsenic is the main treatment.

THE NEW YORK ACADEMY OF MEDICINE.

October 23, 1895.

Dr. D. BRYSON DELAVAN, *Chairman.*

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Exhibition of New Illuminators, Phantoms, and Reflectors, and a Variety of New Laryngeal, Tracheal, and Nasal Instruments.

The Chairman, Dr. DELAVAN, exhibited the electric illuminator of Dr. Greville Macdonald, which, with a fifty-candle lamp with spiral filament, gives a powerful light. He also showed a number of instruments connected with the operation of tracheotomy, including tracheal tubes of soft rubber and of celluloid, and dilators of various sizes. Also head mirrors, attached to the spectacle-frame pattern of holder, but superior to the old model, inasmuch as the backs are formed of aluminium, making them very light. One of the mirrors was so arranged as to admit a pair of lenses, to be used by one who wears spectacles. Dr. Delavan also exhibited a phantom intended for the study of the throat, which admirably showed the various abnormal conditions met with in the ear, retro-nasal space, and larynx; also a set of phantoms made by

Dr. Cresswell Baber, and intended for inspection of the larynx without addition of the upper pharynx.

Demonstration of Kirstein's Autoscope, and of Schmidt's Electric Saw and Vibrator.

Dr. J. W. GLEITSMANN exhibited and demonstrated Kirstein's autoscope, which he recently brought from Berlin. The instrument is intended for the instruction of students in palpation of the laryngeal mirror. By means of it an excellent view of the larynx is obtainable, but the pressure required to keep it in position is so great that some patients are unable to bear it, even after the application of cocaine. Dr. Gleitsmann also exhibited and demonstrated Schmidt's electric saw and vibrator; also a set of curettes and knives for operations in the larynx, and an original Grünwald set for opening the accessory sinuses of the nose.

A Typical Syphilitic Neoplasm or Sarcoma of Larynx.

Dr. WALTER F. CHAPPELL: This man, who is thirty-eight years of age, was first presented by me to the section two years ago. At that time there was a difference of opinion among the members as to whether the neoplasm on the left side of the larynx and epiglottis was an epithelioma or due to syphilis. The man was put on large doses of potassium iodide, and after two months the mass disappeared, although a little thickening still remained when he left the hospital. A month later he returned, and upon examination it was found that the entire epiglottis was infiltrated. This infiltration has gradually increased, and early in June, 1895, the epiglottis was almost entirely removed. It was submitted to Dr. Jonathan Wright for microscopic examination, and he reported that it was a syphilitic neoplasm, although not a typical one.

Soon afterwards the ary-epiglottic folds began to enlarge, and, later, the arytenoid cartilages. Within the past two months a cauliflower-like growth has appeared about the epiglottis, completely surrounding the larynx. The man has taken as much as an ounce of potassium iodide within twenty-four hours without producing any effect, in spite of the fact that three pathologists have reported that the growth was probably syphilitic in nature. The mass is now so large the man is unable to swallow anything but liquid food. It looks like a sarcoma, and the question arises whether this is one of those cases in which a syphilitic neoplasm has changed into one of a malignant nature.

ADDRESS.

The Chairman, Dr. DELAVAN: As this meeting is really the beginning of a new year with us, I wish to say a word of welcome, and to express the hope that the earnest and successful work done in the past in this department may be steadily continued. It is now twenty-two years since the inception of the New York Laryngological Society, the actual originator of this organization; and because ours is the oldest of all such societies it is incumbent upon us to work with proportionately greater energy and faithfulness. The past year has been an interesting one, so far as the

work of this section is concerned ; the meetings have been well attended, and we have had a goodly proportion of valuable material brought before us.

Two circumstances have occurred during the past year which we should not allow to pass unnoticed. The first of these was the death of Dr. Jarvis, which occurred quite recently, and which was a marked event in the history of modern laryngology. He lived but forty years, and yet as long as ten years ago he was a well-known man, having achieved at thirty a reputation superior to that of any physician of his years. His contributions to laryngology were numerous and of rare value, and he richly deserved all of the credit which he received for them. He entered the profession with a broader and more liberal education than is possessed by the majority of physicians, and as pathologist, observer, and inventor he deserved and attained a high rank.

The second event to which I wish to refer is the death of Prof. Hans Wilhelm Meyer, a man whose name is familiar to every physician, and to many laymen, throughout the civilized world, and whose career was one of exceptional interest. His father was a physician, an excellent augury for the success of any medical man. Prof. Meyer was born in Fredericia, Denmark, October 25th, 1824, exactly seventy-one years ago. His early education was received in Holstein, then in possession of its rightful owners, the Danes. He entered the University of Copenhagen in 1843, and was graduated from that institution four years later with the highest honours. After practising in company with his father for three years, he spent three years in studying at the medical institutions at Edinburgh, London, Paris, Montpellier, Vienna, Prague, and Würzburg. He established himself in Copenhagen in 1853 as an otologist, and quickly secured the confidence and support of his fellow-townsmen. In October, 1867, just twenty-eight years ago, a case presented itself to him the study of which brought him undying fame and untold relief from suffering to a host of children, the number of which no man can estimate. A description of this case and others similar to it was promptly published in the leading medical journal of Denmark ; and although a certain amount of information has been added to the subject since then, Prof. Meyer's first article still remains a standard classic. Contrary to what would have been expected, this discovery, certainly one of the most practically important of our generation, was remarkably slow in meeting with the appreciation of the medical profession. For its introduction and popularization in this country we are chiefly indebted to two men, Dr. Albert H. Buck, of this city, who, as early as 1877, instructed me regarding it ; and to the late Dr. Franklin H. Hooper, who, bringing from humane England the information that it was practicable to perform this operation under anæsthesia, robbed the procedure of its otherwise necessary terrors, and gave to us an absolutely painless method for the complete and perfect removal of the offending growths.

Within the last few years the knowledge of this subject has spread to almost every corner of the civilized world, and unfortunate, indeed, is the victim who, needing help, is in a place so remote or so benighted that it is not available to him. The number of children cured by the hands of

one man alone at this date may easily be reckoned at many hundreds. What shall be said of the thousands and tens of thousands here and over the world at large to whom Prof. Meyer, that wisest, gentlest, and kindest among the good physicians of his time, has brought relief from dire suffering and unimpaired ability for the pursuit of happiness and success!

Prof. Meyer was a man of the most ardent enthusiasm in his profession, and for many years he made of the subject of adenoid hypertrophy a most careful study. In the pursuit of it he corresponded with men all over the world in order to get a description of the special types of the condition as occurring in every possible race and nationality. For instance, he has sought information in this country as to the existence of adenoid growths in the negro and in the American Indian, and has searched the remotest parts of the other regions of the world in the same quest. Last spring he met his death while in pursuit of knowledge in this very direction, for he contracted typhoid fever while in Venice, whither he had gone with the intention of studying ancient works of art in order to find evidence that adenoid hypertrophy in the vault of the pharynx existed in the older races. I am told that he discovered evidences that such conditions did exist in the early Greeks.

Personally Prof. Meyer was a very remarkable man. No one could resist the charm of his geniality, the warm-hearted friendliness of his nature. A man devoid of ostentation, his simplicity was of the sort that betokens a really great mind. He was a man of great learning. I have heard him address in a finished speech the representatives of four different nations, each one in his own language. His French was of the best Parisian, his German of the purest, his English was perfect, and delightfully tinctured with a touch of Scotch which he had acquired from his accomplished wife, who was a native of Scotland. He was also well versed in Italian and in the classics. He was a keen lover of the arts and well read in history, especially that of his own land; indeed, his intense patriotism was one of the most delightful characteristics of his nature. His love for Denmark amounted almost to a passion, and could hardly be described. He knew everything about his country, everything that had belonged to it, every point of its history. Living upwards of seventy years, he had the rare satisfaction of seeing the full success of his lifework long before the day of his death. I know of no man who has received such gratifying testimonials of friendship, esteem, and appreciation as did Prof. Wilhelm Meyer. It is fitting that we, who owe so much to him, should stop for a moment to honour his memory.

Looking back over the scientific events of the past year, the names of several diseases are brought to mind in the treatment of which progress has been made. It is to be regretted that the investigations as to the value of the toxins of erysipelas for the cure of sarcoma do not thus far seem to have been successful. They must still be looked upon as in the experimental stage. The value of antitoxin in diphtheria, on the other hand, seems to have been well vindicated by the recent able and authoritative article of Dr. Welch, of Baltimore, whose careful review of the subject and vast collection of favourable statistics gained from many different quarters have placed the value of the remedy apparently beyond

question. Tubercular laryngitis has received much attention both in this country and abroad, and even the most conservative will admit that the progress made in the study of its treatment has been real and helpful. The study of cancer of the larynx has yielded some little satisfaction, as the surgical methods for its relief have been shown to have greatly improved.

In nasal work the direction in which most progress has been made is in connection with sinus disease, and on this subject many interesting papers have appeared both here and abroad. In diseases of the ethmoid cells, the work of Drs. Bosworth, Bryan, and others has materially advanced our practical knowledge of the treatment of suppurative affections of this part.

I trust that the meetings of the coming year will be more and more profitable, and that the interest in this section will increase from month to month, and that every member will feel it a duty, as well as a great pleasure, to come here and contribute his share to the active work of the meetings.

Deviation of the Cartilaginous Nasal Septum; its Cure.

Dr. EMIL MAYER: Deviation of the cartilaginous nasal septum, either congenital or due to violence, presents itself with a great degree of frequency, as the many and varied forms of treatment for its relief would indicate. It occurs nearly as frequently in the female as in the male, and is usually of many years' standing before steps are taken for its relief. The principal symptoms are those resulting from stenosis, and may be more or less severe in different individuals. The symptoms may be headache, radiating pains, mouth-breathing, with its discomforts, malaise on rising, and, as I have seen in one case, asthma, with maniacal attacks, which, on removal of the stenosis, promptly subsided; lastly, the deformity occasioned. The diagnosis is readily made out, it being differentiated from an echondrosis by the presence of a cavity on the opposite side.

The treatment which I have followed and carefully watched for the past twelve years is that known as the Asch operation. In order that the operation and after-treatment may be made clear, I here report the history of a single case:—

Miss X, aged sixteen years. The patient is a confirmed mouth-breather; has copious secretion from the naso-pharynx and right nostril. Left side of the nose entirely occluded by a deviation of the cartilaginous septum half an inch from the external opening. Adenoid vegetations in large numbers were present.

On June 20th, 1895, the patient was operated on, ether anæsthesia being employed. The adenoids were removed first. The hæmorrhage having ceased, the anterior nares were sprayed with a cold solution of boro-lyptol. The curved gouge was first introduced to break up any adhesions existing between the septum and turbinated body, and also to ascertain the presence of any posterior obstruction. The cartilage scissors were now introduced, the blunt edge over the convex surface, and the incision was then made. The scissors were then withdrawn and

again inserted in the same manner, this time at right angles to the first position, or as near to that angle as possible, and a second incision was made. The finger was now introduced in the nose on the convex side, and the segments pushed into the concavity, care being taken to break them effectually. A long-bladed nasal compressing forceps was now well introduced, and firm compression made. This arrested hæmorrhage and straightened the septum, and the spray was again used. The hæmorrhage was comparatively slight. All clots having been removed, a vulcanite hollow perforated splint was introduced on the left side, one being selected which would fit snugly in the nose and remain concealed. A smaller tube was inserted on the concave side and served to prevent the formation of a clot, thus adding to comfort in breathing, and, by making equable pressure, preventing subsequent hæmorrhage. This completed the operation. A spray of cold Dobell's solution was directed to be used every half-hour in both nostrils. The operation was performed on June 20th. There was no reaction, and the patient passed a comfortable night. She breathed freely through both sides of the nose. The tube was removed daily and the nose sprayed and cleansed. On the 23rd the patient was allowed to sit up. The tube was worn continuously for five weeks, and for a week longer at night only. September 15th, the deviation no longer existed, the septum being entirely straight. A free current of air was established; the voice, which was disagreeably nasal before, is now clear and distinct; mouth-breathing is a thing of the past, and the patient was discharged as cured.

In the past three years this operation has been performed at the New York Eye and Ear Infirmary, and in my own practice twenty times. Each case was successful. The ages ranged from nine to forty years. There were sixteen males and four females. In seventeen cases the deviation was to the left. In no instance were there any unpleasant after-effects.

In conclusion, as a result of my experience, it may be confidently claimed that the Asch operation secures: (1) Permanent freedom of breathing through the affected side; (2) a straightened septum; (3) a reduction of the deformity to a minimum; (4) it is of the least discomfort to the patient.

(In connection with his paper, Dr. Mayer presented a number of patients upon whom he had operated. One of these was a boy upon whom the operation had been performed two weeks ago. The patient was presented to illustrate how very little deformity the wearing of the tube occasions, and how easily it can be taken out and replaced by the patient himself.)

The Chairman, Dr. DELAVAN: I have applied this method in several cases, and have been very much gratified with the results. In fact, I do not know of any plan by which such satisfactory results are obtainable.

Dr. MORRIS J. ASCH: This subject has been brought before the section so often that I have very little to say regarding it. I am very glad that Dr. Mayer presented the cases he did this evening, so that you can see the results obtained by this method. The operation, of course, is comparatively simple, there is no danger from hæmorrhage, and in no

case coming under my observation has there been the slightest reaction of an unfavourable kind. The hæmorrhage that occurs is easily controlled by an ice-cold spray, which I always keep in readiness. This checks the bleeding almost at once. After the tube is inserted there is no further danger of bleeding. I have never seen a secondary hæmorrhage following the operation. The appearance of the septum for a time may not be as straight as one could wish, but the function of the nose is perfectly restored, and in a little while the parts accommodate themselves to their new position. The result of this operation is to make the parts lap over, on account of the redundant tissue. In a short time this redundant tissue will be absorbed. If any remains, it can easily be removed with the saw or trephine. I have once or twice seen a pinhole perforation produced by the operation; one of these followed the first operation of this kind I ever performed, while the other was very slight, and never gave rise to any trouble.

Dr. JONATHAN WRIGHT: I have done this operation half a dozen times, and, while I can record a few successes, I have not been as fortunate with it as Dr. Asch or Dr. Mayer. My chief objection to the tube is that, owing to the resiliency of the septum, it is continually being pushed out. In one or two instances I dispensed with this tube, using instead a tube an inch and a half or two inches long, which extended well back in the nose, and was held firmly between the septum and the external part of the nose. There is another objection to the operation in that large number of cases where there is vertical deviation close to the columna. Here you do not have any opposite wall for good counter-support. The ala of the nose does not furnish it. In such cases I think the insertion of a long tube is preferable.

Dr. WILLIAM K. SIMPSON: I have seen this operation performed a number of times, and also done it myself, and I regard it by all means as the best operation that has been thus far advanced for this purpose. In my opinion, one of the most important points in connection with the operation is that, after the crucial incisions, the finger should be pushed from the convex side of the septum through into the concave side, thereby effectually breaking up the four bases of the fragments. I think the flattened tubes shown by Dr. Mayer this evening are superior to those originally employed by Dr. Asch, inasmuch as they distribute the pressure equally over the septum and are more easily retained.

Dr. WENDELL C. PHILLIPS: I well remember my experience with operations on the septum by the older methods, with perhaps one success and half a dozen failures. With the perforated cork splint I have been much more successful than by any previous method employed, and I look upon this operation of Dr. Asch, which I have more recently attempted, as another step in advance. The most important step in connection with it, I think, is the thorough breaking up of the cartilaginous septum. It does not matter so much what splint you use, so long as it fits well. I think the splint shown to-night is somewhat objectionable on account of the perforations. I have seen these produce considerable irritation. The original idea in putting in these perforations was, I believe, for the purpose of drainage; but, as a matter of fact, there is so much swelling

that the membrane is forced into these openings, and often gives rise to much granulation-tissue formation. I would like to ask Dr. Mayer whether, in any case where he was unable to carefully carry out the after-treatment, he has had persistent ulceration follow the operation. I have seen this in one case, following the cork operation. The septum has remained perfectly straight for two years, but the ulceration has been very persistent. It was a hospital case, and the patient lives under very unfavourable surroundings. The after-treatment I regard as very important—as important as the operation itself. I do not think it safe to operate and then let the patients go home, seeing them, perhaps, once a week. The tube should be worn a long time, until the septum has regained its full strength. I have found it necessary to leave it in for five or six weeks.

Dr. T. PASSMORE BERENS: I have done this operation several times. The principal objections to it, I think, are the perforations in the sides of the tubes—which produce a considerable amount of granulation tissue—and their shape, being too round for even support. The perforated cork splint has been much more successful in my hands than these vulcanite tubes. The corks are more applicable when the deflection of the septum is high up, and in anterior deflections. I have been in the habit of using two cork splints, one in either naris.

Dr. ROBERT C. MYLES: I wish to ask the reader of the paper if he has experienced much difficulty in breaking the upper segments from or near their attachments to the lower border of the perpendicular plate of the ethmoid bone. I have performed the operation quite frequently with good results, but there was a perforation in one or two cases, which I attributed to the resistant upper sections.

Dr. ASCH: Dr. Wright stated that in some of his cases he failed to get a good result because, on account of the resiliency of the septum, the tube could not be retained. He probably did not perform the operation as I have described it. If he had broken the segments effectually there would have been no resiliency, and it would have been impossible for the septum to spring back to its original position. In regard to cases where there is vertical deviation, if Dr. Wright will come to my clinic some day I will show him that such cases can be treated just as well by this method as by any other. The kind of splint we use is comfortable, and it answers our purpose. I have no doubt there are others quite as effectual.

Dr. WRIGHT: I think Dr. Asch misunderstood me. The tubes would be pushed out not only by the resiliency of the septum, but by the swelling which occurs from the violence of the operation. As regards the crucial incision, I do not understand why it should be any better done with the scissors than with the knife. Before the scissors were devised we employed a sharp-pointed bistoury; the chief objection to it was that the point of the knife would injure the mucous membrane on the opposite side of the nose, and we had a great many failures.

Dr. ASCH: I do not think this operation was done before I described it. I made the scissors for the purpose of convenience. I do not think there is any description of the operation before my own, although individuals may have done it.

The Chairman, Dr. DELAVAN : There is nothing new under the sun, and many apples fell to the ground before Newton discovered the law of gravitation. While, undoubtedly, crucial incisions have been made for a long time, yet I believe the technique of this operation was never heard of until Dr. Asch described it.

Dr. MAYER : In connection with the retention of the tube, it should be borne in mind that a tube of proper size should be used. I have never yet had the tube come out when I was not ready to have it come. I see no reason why cork splints, if properly made, should not be equally satisfactory. I doubt, however, whether they are as aseptic as the vulcanite. The perforations in the tubes are not put there for the purpose of drainage, because there is no drainage; they are there to keep the tube in position. The small granulations that form are unimportant, and I pay very little attention to them. This operation will afford positive relief in cases of deviated septum, even more than has been claimed for it.

The Chairman, Dr. DELAVAN : During the summer a committee was appointed in Europe for raising funds to build a monument in memory of the late Prof. Wilhelm Meyer; \$5000 are the sum they propose to raise, and of this \$1000 have been allotted to this country. The presiding officers of representative societies in England, France, Germany, and in the United States have signified their willingness to take an interest in this matter. The representative in this country is the President of the American Laryngological Association, and it is important that we should give him our assistance. It is not proposed to collect this money from the physicians. The plan suggested is to collect the money in small sums from the children who have been operated on for the removal of adenoids. The idea is not a new one, and I think it would be the most graceful and beautiful way of making the subscription.

The Chairman (Dr. DELAVAN) and Dr. T. R. FRENCH, of Brooklyn, were named as a committee to receive contributions for the above purpose.

REVIEW.

Browne.—*Diphtheria and its Associates.* By LENNOX BROWNE, F.R.C.S. Ed.

Published by Bailliere, Tindall & Cox, London.

THE author states that the present essay is based mainly on a course of lectures delivered for the purpose of establishing a landmark at an important era in the history of diphtheria. At no time in the history of medicine has more attention been paid to the study of the causation of this affection than now, and the profession is indebted to Mr. Lennox Browne for having placed before its members a well-written essay, incorporating the results of a long clinical experience, with an excellent review of the present teaching of bacteriology in this branch of surgery. The work includes chapters upon the history of diphtheria, its etiology, pathology, bacteriology, and clinical diagnosis, as well as sections devoted to clinical and therapeutic studies. The work not only includes a good deal of what Mr. Lennox Browne has formerly written, but deals largely

with his experience of recent methods of treatment with special reference to antitoxin. Anyone desirous of obtaining knowledge of the present aspect of medical science in relation to the changes now taking place in our views of the etiology and treatment of diphtheria will be repaid by a careful study of this work, which embodies not only the ideas of etiology of diphtheria previous to the discovery of the Klebs-Loeffler bacillus, but also the effects of that discovery. A considerable number of the profession may be inclined to take a less serious view of the risks of injection by blood-serum, and a more hopeful view of its results; but setting aside controversial questions such as these, which time alone can settle, Mr. Lennox Browne has endeavoured impartially to give his own views of the question. The work has been profusely illustrated, and it need hardly be said that the coloured drawings by the author are excellent; the photographs of micro-organisms have been well chosen and reproduced. Altogether the author is to be congratulated upon the success of his work.

J. Macintyre.

The etiology of diphtheria is discussed in three chapters devoted respectively to predisposing causes, bacteriology, and toxic products. The predisposing causes are very fully considered, and in this portion of the work the subject receives very substantial contributions from the author's personal experience. The teachings of bacteriology in the last twenty years have opened a new era in the history of infective diseases, and greatly modified our conception of the morbid processes. In no disease, perhaps, is this better exemplified than in the one which forms the subject of Mr. Lennox Browne's work. The reader is presented in this essay with a very complete survey of the whole subject, and, while there are some points about which we are not at one with the author, the general excellence of the book is such that we lose sight of differences of opinion. For example, in the bacteriology of diphtheria and the associated affections, we are very far from regarding the classification of membranous sore throats into "simple bacillary diphtheria," "cocco bacillary diphtheria," "non-bacillary diphtheria," "non-virulent bacillary diphtheria," as satisfactory either from a bacteriological or clinical point of view. The disease is diphtheria if it is due to a specific microbe, the bacillus diphtheriæ; and to apply the name diphtheria in any form or modification to a condition which is not specifically diphtheria but something else, is highly objectionable, and can only tend to perpetuate that confusion of terms from which we have long desired to be delivered. In regard to the "pseudo-bacillus," so called, we are surprised to find Mr. Lennox Browne asserting that it is capable of producing a membranous inflammation of the throat, while at the same time it is "non-virulent" in the sense that it is incapable of producing toxæmia either in the person of the individual in whom it is found or by inoculation of lower animals. Surely, if it produces membrane it cannot be free of virulence. Moreover, inoculation of animals is not an absolute test.

The toxic products of the bacillus and its associates are set forth in the light of the most recent observations, and the same is to be said of the morbid anatomy and the bacteriological diagnosis of the disease.

R. M. Buchanan.

THE WILHELM MEYER MEMORIAL.

THE proposal to erect a statue to the memory of this distinguished surgeon has been well received, not only in this country, but elsewhere. The Municipality of Copenhagen have promised to grant a suitable site for the statue, and there and in many other countries committees have been instituted for the furtherance of this object. In London an influential committee has been formed, under the presidency of Dr. Felix Semon, the names including those of the presidents of the Royal College of Physicians and Surgeons, and a large number of specialists in our own branch of surgery. The honorary secretaries are Dr. Cresswell Baber, of Brighton, and Mr. Charles A. Ballance, 106, Harley Street, London. The work of the committee is being actively pursued, and we have much pleasure in calling attention to the subject. There can be no doubt that, as the object has been taken up in so many different centres, the work will be carried to a successful issue. Everyone in our special branch is conscious of the great benefit of Meyer's work and discovery, and we trust that the committee formed in this country will meet with a hearty response. The honorary treasurer is A. E. Cumberbatch, Esq., F.R.C.S., 80, Portland Place, London, who will be pleased to receive subscriptions on behalf of the acting committee.

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CHARLES A. BALLANCE, F.R.C.S., 106, Harley Street, W.	

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